Southern Textile Exposition and Knitting Arts Exhibition Number
APRIL, 1935

# COTTON

*Serving the*

## TEXTILE INDUSTRIES


# CONDOR V-BELTS

## HAVE NO INELASTIC STRETCH

When preparing Condor Whipcord for manufacture, it is scientifically pretreated to remove all inelastic stretch. This is one of eight features of construction embodied in Condor Whipcord V-Belts. Each feature—flexibility, strength, balance, lateral rigidity, pulley traction, etc.—contributes to the outstanding performance of Condor Whipcord V-Belts. Stretch does not exceed 1.6% to 1.9% and internal heating of the belt caused by rapid flexing is virtually eliminated. Condor Whipcord V-Belts are particularly fitted for the most severe drives. A trial will convince you.

**8-Point Balanced Construction**

1. No inelastic stretch
2. Wide margin of strength
3. Uniform flexibility
4. Freedom from structural failures
5. Smooth running
6. Maximum traction
7. High resistance to side wear
8. Correct lateral rigidity

Sold by Leading Jobbers—Manufactured by the Makers of Condor Compressed Belt

**THE MANHATTAN RUBBER MFG. DIVISION**
OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES and FACTORIES, 23 TOWNSEND ST., PASSAIC, N. J.

LARGE CAPACITY • WIDE RANGE OF COLORS • SUPERIOR DYEING • GEOGRAPHICAL CONVENIENCE • LOW WINDING COSTS • MERCHANDISING COOPERATION • ADVERTISING VALUE
PHILADELPHIA, PA.
GREENVILLE, S.C.
THE COLORED YARNS IN THIS FABRIC ARE
PROCESS DYED
FASTNESS AND LIGHT GUARANTEED UNEXCELLED

## WE OFFER MANUFACTURERS OF YARN DYED FABRICS

# A WELL ROUNDED SERVICE

A ball bearing fills mechanical needs efficiently, because it is WELL ROUNDED.

Franklin Process Custom Yarn Dyeing satisfies the needs of manufacturers of yarn dyed fabrics for the same reason. Our staff includes not JUST good craftsmen, but also GOOD MERCHANDISERS.

To be specific, we have the organization, knowledge, experience and reputation to furnish colors BEST SUITED to the particular requirements, — colors with sufficient fastness, levelness and penetration, delivered on time and AT A PRICE that will permit fabric sales in satisfactory volume, other factors being equal. Furthermore the quality of Franklin Process Colors is so widely recognized that, if identified, they will help sell your merchandise.

Custom Yarn Dyeing
Natural Yarns
Colored Yarns
Glazed Yarns
Dyeing and
Processing Machines

THE COLORED YARNS IN THIS FABRIC ARE FRANKLIN PROCESS DYED FASTNESS TO WASHING AND LIGHT GUARANTEED UNEXCELLED

When you pay for colors of KNOWN fastness, advertise the fact. Use the Franklin Process Fast Color Label. Ask us about it.

The manufacturing and merchandising knowledge that makes this possible has been acquired only by years of incessant research, experimentation and contact with the trade. Real achievement is always born of experience. So if you want the best in yarn dyeing service, look to

# FRANKLIN PROCESS

ESTABLISHED 1910

*Pioneers in Package Dyeing*

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

# New Stimpson Twin Groove Shuttle

## It Has the Patent Twin Thread Track

Quick on Thread-up

Sure on Thread-up

Will Not Unthread

Improved First Pick

The Twin Grooves shift the Yarn from the first to the second track away from the point of the Eye early in the First Pick.

Locked in this second groove by the new wide point of a new Eye, there is increased tension on the First Pick. This eliminates many First-Pick weaving troubles and insures raising the Fork on First Pick.

From the second groove the Yarn is positively carried into the Side Eye at the start of the Second Pick.

If, as sometimes happens in weaving, the Yarn leaves the side eye, it never goes back of the second groove and immediately returns to the side eye on the next pick from the left-hand box.

The New Twin Groove Shuttle, with its Twin Thread Track, its Cast Iron Eye of special design to hold the Yarn in the second groove, and the new Spring that will not loosen, was designed to meet the new demands of High Speed Weaving.

## Like the High Speed Loom
## It Scraps the Past
## And Makes Older Shuttles Obsolete

## DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

# 18¢ A YEAR IS A LOT OF MONEY

## 100,000 *spindles prove it!*

In one well-known Southern cotton mill, for instance, our engineers demonstrated that Texaco *tested* Lubricants would make a clear saving of 18c per spindle, per year. Exacting power-consumption tests over periods of weeks prove these results. With 100,000 spindles, that small saving amounted to $18,000 a year. Applied as recommended, Texaco *tested* Lubricants in this mill, as in others, practically eliminated troubles due to spindle wabble and staining.

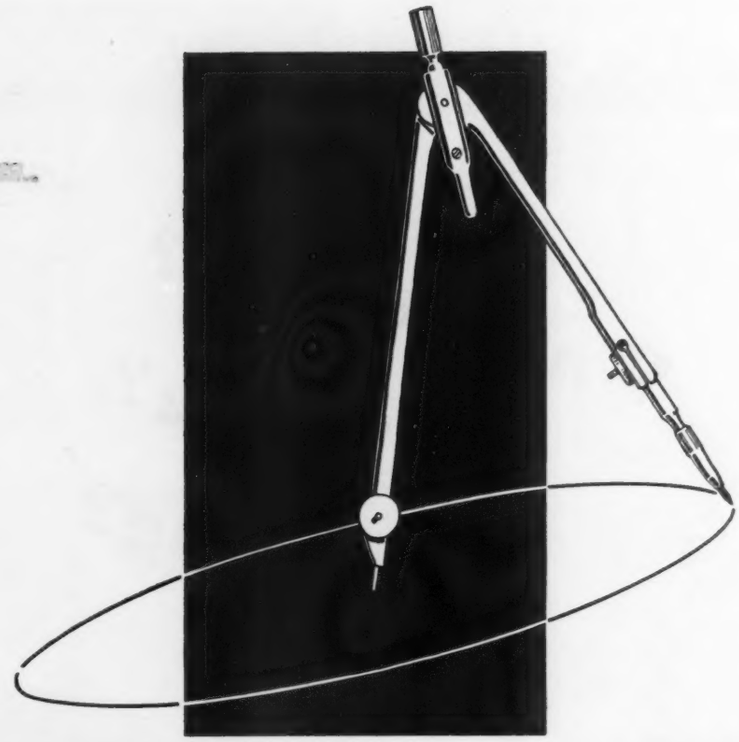
It will pay you to find out about these lubrication economies. Just write The Texas Company and ask for a Texaco representative to call with the proof. It will cost you nothing. Do it today.

THE TEXAS COMPANY
135 East 42nd Street New York City
*Nation-wide distribution facilities assure prompt delivery*

TEXACO

# TEXACO *tested* LUBRICANTS

REFINERY TESTED FOR UNIFORMITY • • • SERVICE TESTED FOR ECONOMY



# AHEAD IN DESIGN

Visit us,
Southern Textile
Exposition, Sec. 436—Annex.

Creative engineering of a high order has marked the progress of ball bearing design at New Departure for over forty years.

This understanding experience has pioneered all the present day forms of dual capacity ball bearings, such as angular contact, single and double-row types.

It has originated the new and revolutionary "Lubricated for Life" ball bearings, also many other new types which have changed application practice and added production and maintenance efficiency.

Advanced design... traditional quality and precision... creative engineering... that is what New Departure Ball Bearings offer you.

The New Departure Manufacturing Co., Bristol, Connecticut. Sales and Engineering offices at Detroit—Chicago—San Francisco and London, Eng.

## NEW DEPARTURE BALL BEARINGS

*Nothing Rolls ● Like a Ball*

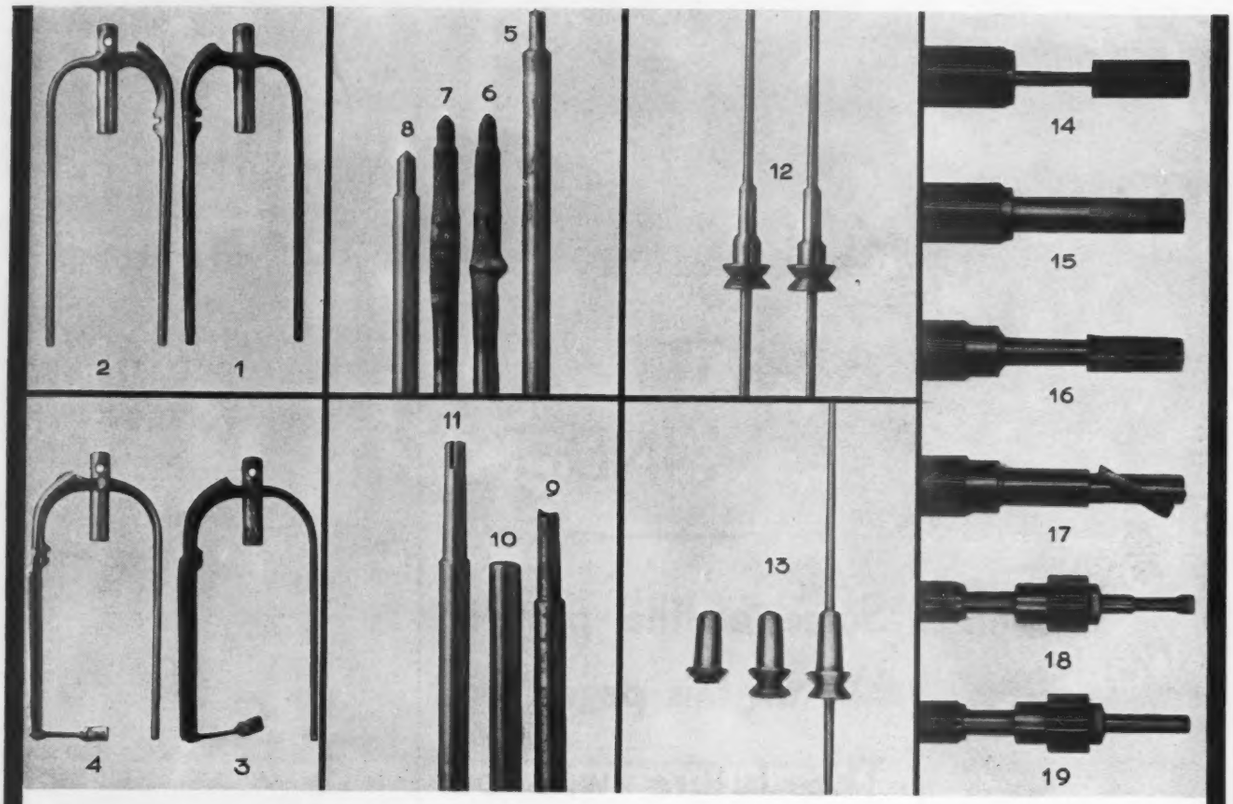
# *Let us solve* YOUR *problems for you!*

**Warp Sizing?**
**Finishing?**
**Printing?**

Be Sure to Visit Booth No. 457
at the
SOUTHERN TEXTILE EXPOSITION
Greenville, So. Carolina
APRIL 8th to 13th INCLUSIVE

Chemists from our Textile Research Laboratories will be available at Booth No. 457 to answer questions relating to our products and their application in all phases of textile manufacture.

CORN PRODUCTS SALES COMPANY • 17 BATTERY PLACE, NEW YORK CITY
BRANCH OFFICES: GREENVILLE, S. C. • SPARTANBURG, S. C. • BOSTON, MASS.




1, Worn hollow leg and nub.

2, Leg and nub repaired, flyer repolished.

3, From mill junk pile after three years.

4, Completly overhauled and repolished.

5, Received with broken step end.

6, New step and electrically butt welded.

7, Weld hammered out.

*8, Turned, ground, repointed and repolished.

9, Slot in top broken.

10, Old top removed.

11, New top welded on, slotted, ground and polished.

*Roving spindles are finish ground, not merely lathe turned and hand polished.

12, 13, Worn out whorls. Spindles rewhorled, repointed, straightened and polished.

14, Steel roll with worn neck and square. (Actual photograph of roll sent for repair.)

15, Renecked, flutes filed and stoned. Back in service.

16, Worn bearing and square.

17, This square is worn round and held with shims. A new plug will make it like new.

18, Geared ends. Roll just as received.

19, In condition for work again.

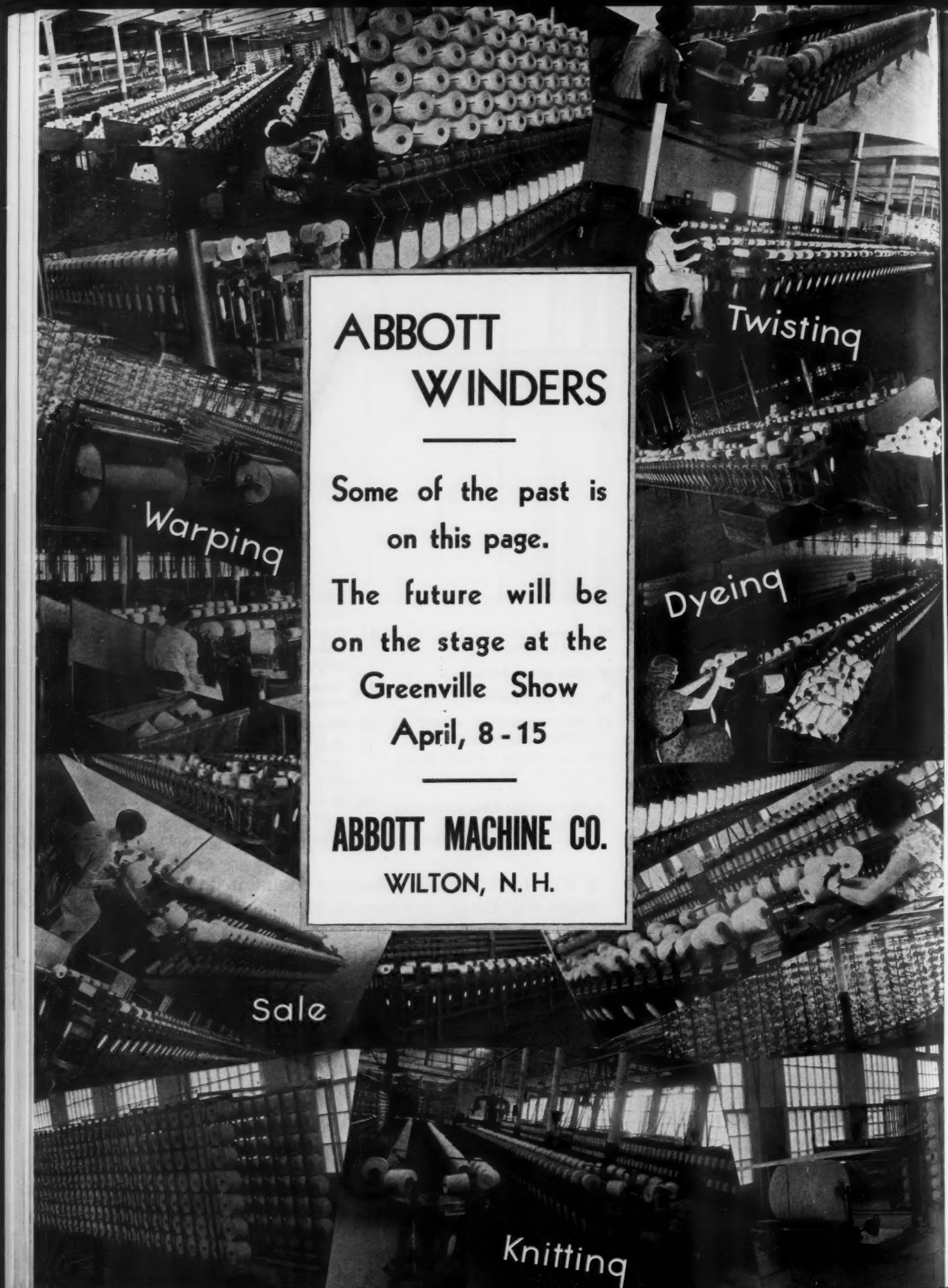

*At the*
ELEVENTH
SOUTHERN
TEXTILE
EXPOSITION

● Visit our Booths and become acquainted with what our Charlotte Repair Shop is doing to raise the standards of cotton mill repairs. . .

● We will have on display a comprehensive exhibit showing the best methods for repairing Spindles, Flyers, Steel Rolls, Cylinders, needling for Combers, and Card Screens. . . . . .

● If we are not handling your Southern repair work let us demonstrate the economy of a factory-guaranteed job. . . . . .

SOUTHERN REPAIR SHOP
*Operated by* WHITIN MACHINE WORKS
Court Square Charlotte, N. C.




# ABBOTT WINDERS

Some of the past is on this page.

The future will be on the stage at the Greenville Show April, 8 - 15

**ABBOTT MACHINE CO.**

WILTON, N. H.

*Bigelow-Sanford Carpet Co., Inc. Thompsonville, Conn.*

*Chas. T. Main, Inc. Engineers Boston*

# After 40 Years Experience—*"Our standard practice is to use Maple for Floors in buildings of this type"*

WHETHER you're building a new mill or remodeling the old, the service records of Northern Hard Maple will *prove* what flooring is best for you to use. For in countless mills, where flooring must fill many difficult requirements, Maple floors laid many years ago are still serving their owners with complete satisfaction.

Northern Hard Maple is tough-fibred, tight-grained, resistant to abrasion, lastingly smooth. Will not sliver, splinter or develop ridges—even when subjected to the wear of heavy, rolling trucks with steel casters. Hard Maple actually outwears stone!

It is warm, dry, resilient, comfortable beneath the feet. Reduces fatigue. Simplifies plant alterations—creates no dust injurious to the bearing surfaces of machinery.

Hard Maple is remarkably easy to keep clean and free from lint—requires only brushing. Whether you floor with blocks or strips—with or without pattern—over wood or concrete sub-floors, or over your present floor—Northern Hard Maple will provide a floor that endures and satisfies.

Write for grading rules and complete specifications for laying and finishing MFMA Maple Floors.

"We are pleased to send you a photograph of one of the buildings which we designed for the Bigelow-Sanford Carpet Co., Inc. at Thompsonville, Connecticut. This building is a modern textile mill of the slow-burning-type of construction, having steel beams, plank floors with Maple top floors.

"It has been our standard practice in buildings of this type to use Maple for the wearing surface of floors. Our forty years of experience as designing engineers of textile mills has shown that for this class of buildings the Maple top floor has a long life, a low maintenance cost, is conducive to the comfort of the operatives, is not affected adversely by oils and is readily adaptable for fastening machinery to the floors."

CHAS. T. MAIN, INC.
By Charles T. Main

## *New, penetrating heavy-duty finishes*

**Seal the surface. Keep out dirt. Resist soil stains. Eliminate scrubbing. Non-slippery. Will not mar, scratch or flake off. Also preservative types which resist the effects of dampness.**

★

**YOUR LOCAL LUMBER DEALER WILL SUPPLY YOU**

**with MFMA Maple Flooring—products of the following manufacturers licensed to use the Association trade-mark:**

Beck, August C. Company Milwaukee, Wis.
Brown Dimension Company, Manistique, Mich.
Bruce, E. L. Company Memphis, Tenn.
(Mill at Reed City, Mich.)
Cobbs & Mitchell, Inc. Cadillac, Mich.
Connor Lumber & Land Company, Laona, Wis.
(Sales Office, Marshfield, Wis.)
Cummer-Diggins Company Cadillac, Mich.
Farrin Lumber Co., M. B. Cincinnati, Ohio
Holt Hardwood Company Oconto, Wis.
Herry & Hanson Flooring Co., Grayling, Mich.
Mitchell Brothers Company Cadillac, Mich.
Northwestern Cooperage & Lumber Co. Gladstone, Mich.
Oval Wood Dish Corp. Tupper Lake, N. Y.
Robbins Flooring Company, Rhinelander, Wis.
Sawyer Goodman Company Marinette, Wis.
Stephenson Company, I. Wells, Mich.
West Virginia Pulp & Paper Co. Cass, W. Va.
Wells, J. W. Lumber Co. Menominee, Mich.
Wisconsin Land & Lbr. Co., Hermansville, Mich.
Yawkey-Bissell Lumber Co. White Lake, Wis.

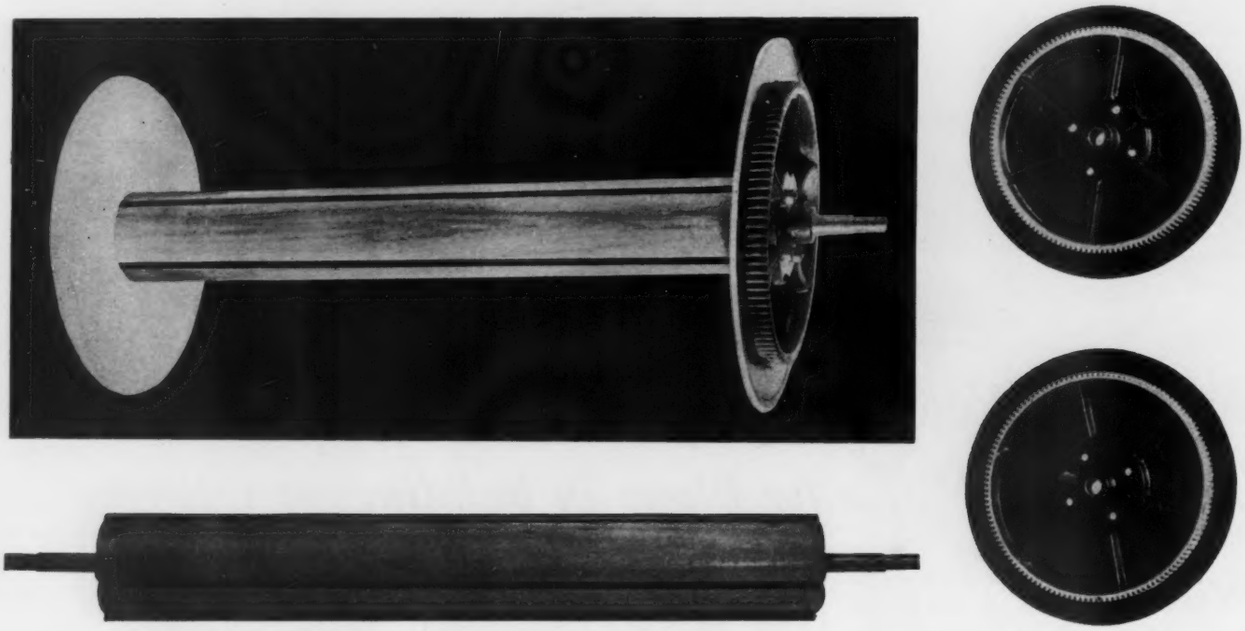
**MAPLE FLOORING MANUFACTURERS ASSOCIATION**
**1794 McCormick Bldg., Chicago, Illinois**

*Let our service and research department assist you with your flooring problems. Write us.*

# Floor *with* Maple

The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. . . . **MFMA**

# *for* ECONOMICAL



## • COMPLETE LOOM BEAMS • BEAM HEADS • BEAM BARRELS

West Point loom beams, beam heads and beam barrels are superior because they are properly made of the right materials.

### ETCHISON PATENTED STEEL HEADS

For best results our patented loom beam steel heads are recommended. There is no warpage because the joints are riveted and all other details of construction are worked out to give satisfaction and lasting service.

*Your Inquiries*

# WEST POINT FOUNDRY

BATSON-COOK CO.
WEST POINT,

*ALSO MANUFACTURERS OF SPECIAL MACHINERY, CLOTH INSPECTING*

# MAINTENANCE

## • TEXTILE GEARS •

*MADE FROM*

**SPECIAL ALLOY CAST IRON • CARBON STEEL • BRASS • BRONZE**

*IN ANY TYPE*

**SPUR • BEVEL • SPIRAL • INTERNAL • WORM • RACK • SPROCKET**

*WITH*

**CUT OR CAST TEETH**

Our facilities enable us to economically produce all types of gears used in textile mills.

●

## REPAIR PARTS

West Point textile machinery repair parts are made of toughest iron, from properly made, permanent patterns, and finished on modern machines. They fit, they last long and they are economical to use.

QUICK SERVICE — FAIR PRICES

*are Solicited*

# & MACHINE COMPANY

—OWNERS

GEORGIA

*MACHINES, CARD CYLINDER BEARINGS AND PICKER DRIVES*

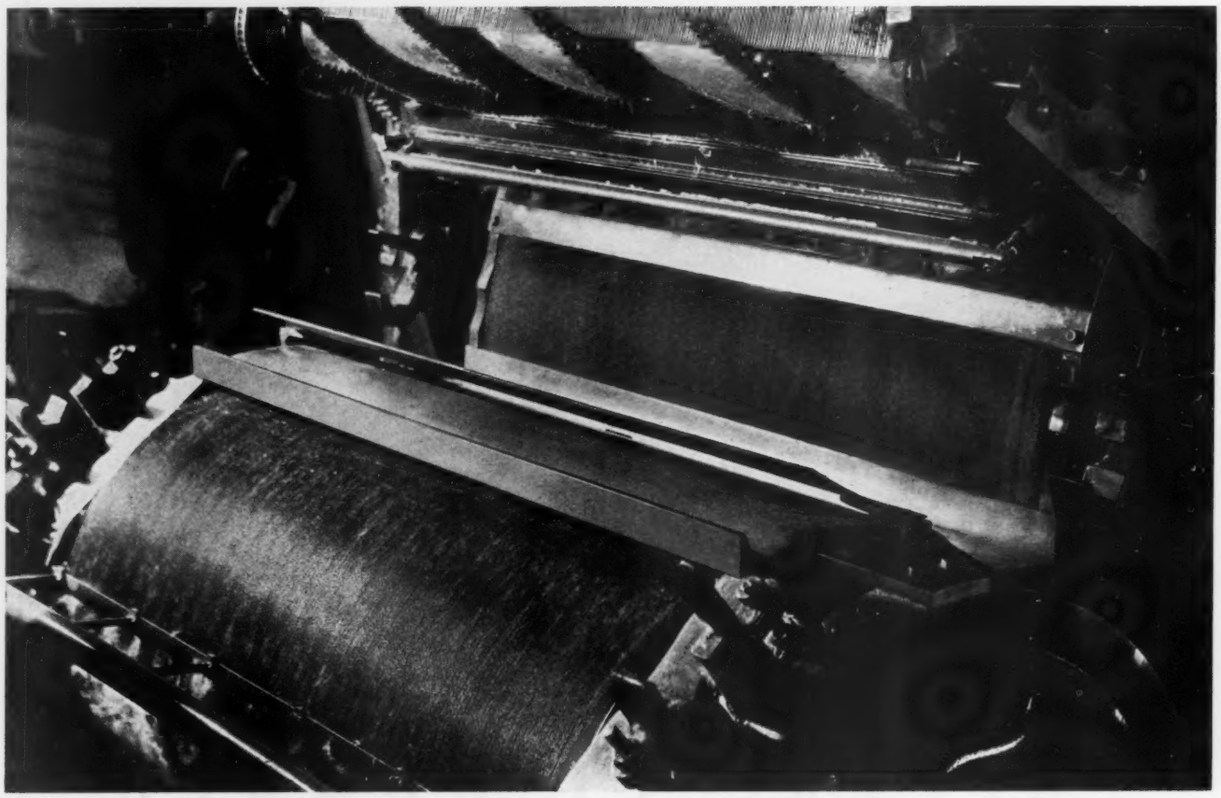
# HYGROLIT
## System

Known the world over for
outstanding chemical conditioning,
setting twist,
abolishing losses of weight,
increasing breaking strength,
lubricating brittle yarns,
improving weaving and knitting

MILLIONS of POUNDS of YARNS
are hygrolited now monthly
in U. S. A.

HYGROLIT, INCORPORATED
KEARNY, N. J.

# "TUFFER Card Clothing has been on our cylinders over 20 years"... says a fine stock mill



EVERY operation in making TUFFER Card Clothing is governed by standards of accuracy notable for their precision. It is possible to produce good card clothing without such high standards and pride in craftsmanship. But it has always been our policy to make doubly sure. That's why it is not unusual for TUFFER Card Clothing to give performance for twenty years or more.

The patented foundation of TUFFER Clothing supports the card wire better and, when applied to the drum, "stays put," firm yet flexible.

TUFFER CARD CLOTHING

The quality of materials plus the quality of workmanship result in better and longer performance in the card room.

Seven out of ten mills rely upon TUFFER Card Clothing. If you have never tried TUFFER in your card room, get acquainted with a trial order of fillets or flats. The best proof is a test in your own mill.

Write the nearest Howard Bros. office for quick and dependable service.

**HOWARD BROS. MFG. CO.**

HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

**So. Plant:** 244 Forsythe St., Atlanta, **Branch Offices:** Philadelphia, Dallas, Washington

**Products:** Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers, Fancies, and Cylinders, Doffer Rings, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins Rewired at Southern Plant. Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

E. W. MONTGOMERY, PRES. & TREAS.
F. B. MONTGOMERY, VICE PRES.

S. H. McKITTRICK, SECRETARY
G. F. WILLIAMS, ASS'T. TREAS.

# E. W. MONTGOMERY CO., INC.

*Cotton Brokers*
*and Merchants*

**GREENVILLE, S. C.**

*Branch:*
**Gastonia, N. C.**

Buying offices and agencies covering Mississippi Delta, South Carolina staple territory and Phoenix, Arizona, Pima Section.

Specializing in staple cotton of selected character for particular customers making a product that bears the stamp of quality.

# GREENVILLE BONDED WAREHOUSE CO., INC.

**GREENVILLE, S. C.**

New, modern fireproof warehouse—low insurance rates.

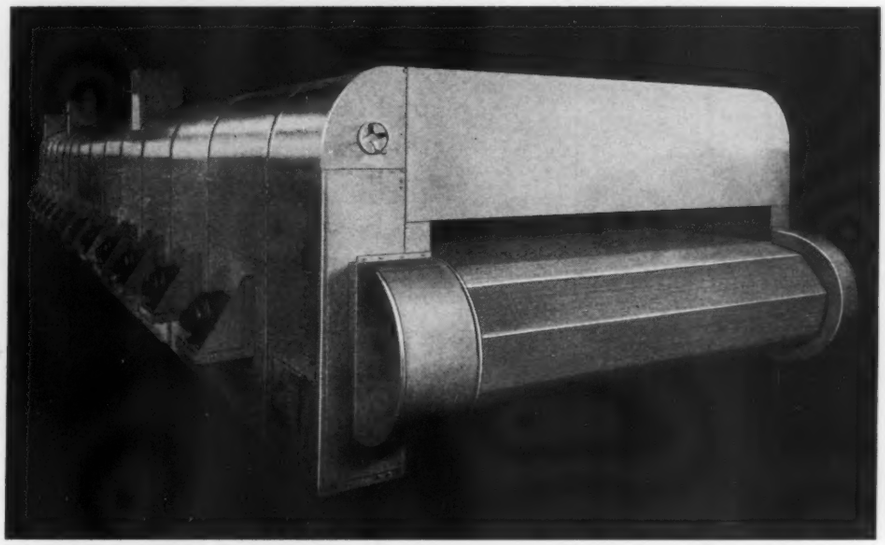
Built in best up to date manner, designed by
J. E. Sirrine & Co.

Located on railroad siding.

Service with speed and accuracy, special attention to proper sampling and weighing.

Greenville has concentration and reshipping privileges.

# Modern Drying Equipment



**One Apron Stock Dryer**

## NEWEST DESIGN

**A leader in its field. This Sargent Stock Dryer has proven its worth to many satisfied users. This general acceptance by owners can be attributed only to the superiority of design, materials and workmanship so characteristic of these machines.**

## FEATURES:

**Centrifugal fans, direct motor connected, New type coils, Sectional Conveyor with speed control.**

**--NEW PATENTED CURVED TOP--**

**reduces air resistance—promotes free air flow.**

## SARGENT PRODUCTS

**Acidifying Machine—Automatic Extractor—Automatic Feeders—Backwashers — Backwash Dryers — Bagging Machines—Ball Winder—Carbonizing Dryers — Cloth Dryers — Carbonizing Dusters—Cotton Stock Dryers — Crush Roll Machines — Press Roll Machines — Single Apron Dryer—Skein Dryer—Special Dryers — Wool Dryers — Wool Washers — Yarn Conditioners — Yarn Scouring Machines.**

## C. G. SARGENT'S SONS CORPORATION

**Graniteville, Mass.—Founded 1852**

**Southern Agents:**
**Fred H. White, Charlotte, N. C.**
**Fred P. Brooks, Atlanta, Ga.**

**Philadelphia Agent:**
**F. E. Wasson,**
**205 Ledger Bldg.**

SARGENT IS THE PIONEER AMERICAN BUILDER OF DRYERS

*Spinners Listen To Others . . . .*

*But Continue To Use . . . .*

# The Universal Standard Ring Travelers

The Bowen Special Temper
Narrow Round Point
Square Point
Flat, Oval and Round Wire
The Bowen Vertical Steel
The Bowen Vertical Bronze
The Bowen Patented Bevel Edge
The Bowen Patented Vertical Offset
The Bowen Patented Ne-Bow Vertical
*For Spinning and Twisting*

IF YOU REQUIRE . . . . .

1. *Uniformity*
2. *Uninterrupted and Dependable Performance*
3. *Longer Life*
4. *Quality Product*

**First Quality Cotton, Wool, Worsted, Silk and Rayon Yarns are produced only by using ring travelers that dispel any doubt as to their performance and manufacture . . . . . UNIVERSAL STANDARD RING TRAVELERS . . . . . meet these requirements, and more, effect a gratifying saving in ring traveler costs by the extra measure of service and life they assure. . . . . Order them now. . . . . Samples mailed upon request.**

## U. S. Ring Traveler Company

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN
President and Treasurer

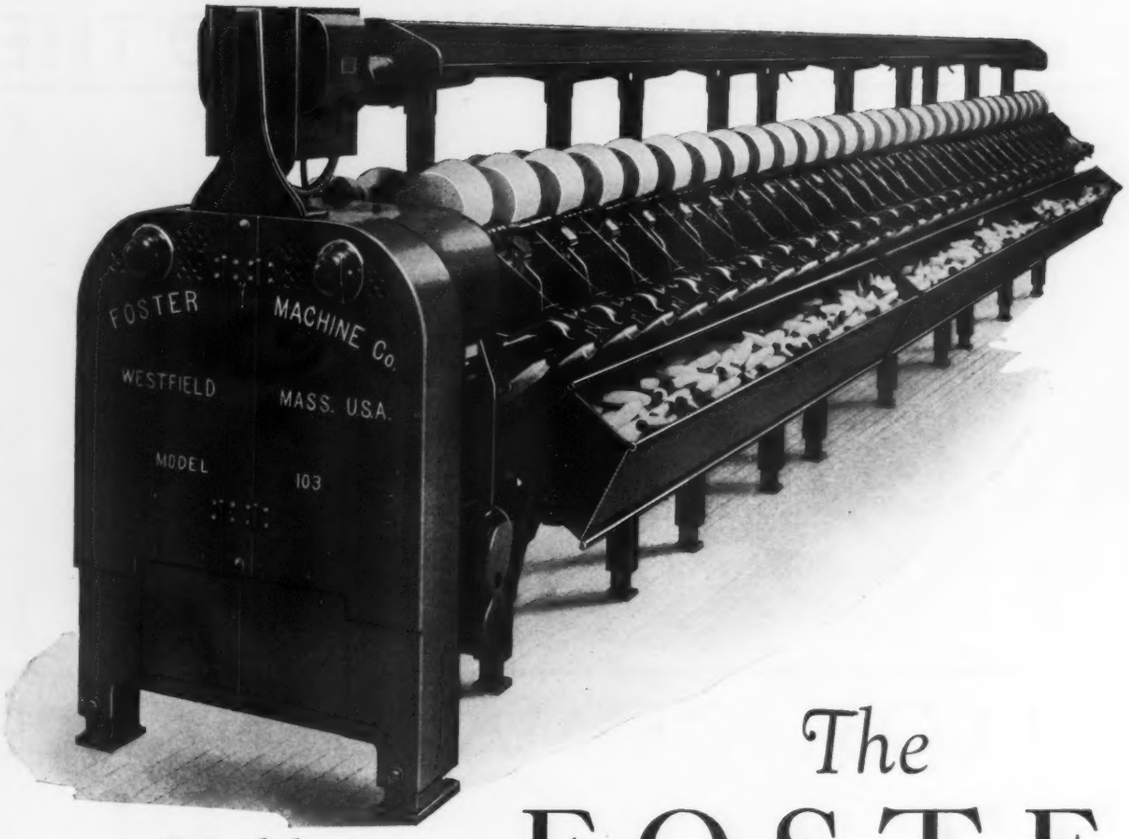
*SOUTHERN SALES REPRESENTATIVES*

William P. Vaughan
P. O. Box, 792
Greenville, S. C.

Oliver B. Land
P. O. Box, 158,
Athens, Georgia

Torrence L. Maynard
P. O. Box, 454
Belmont, N. C.

"A TRAVELER FOR EVERY FIBRE"




Model
103

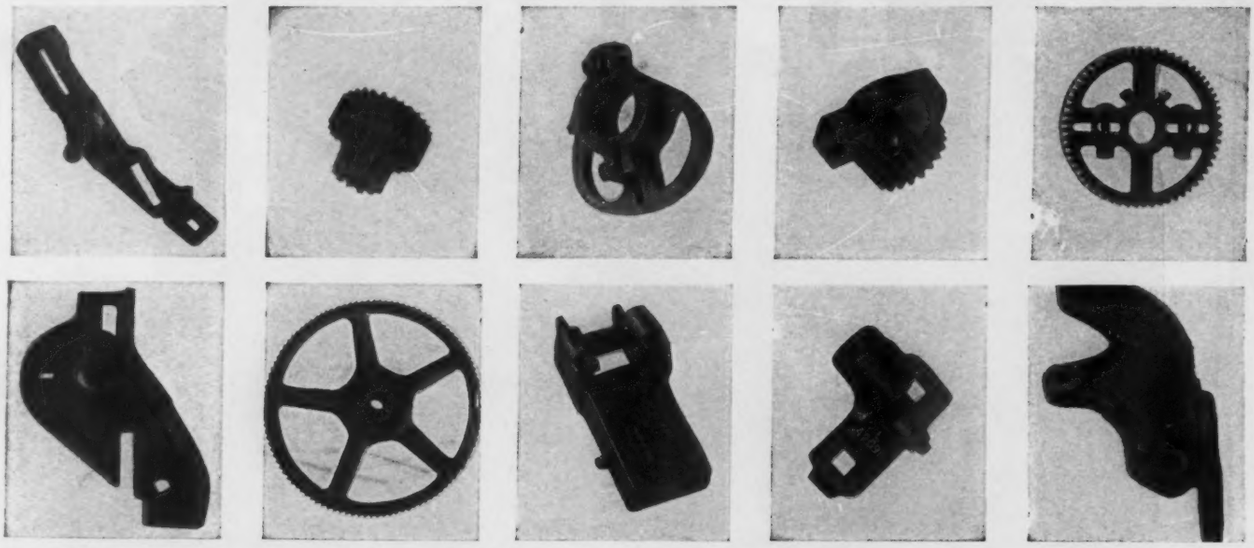
# The FOSTER *Rotary Guide* CONE WINDER

This latest Foster Winder for use in connection with the ***Foster Cone Warping System*** will be shown in operation at the Greenville Textile Exposition Greenville, S. C.—April 8th-13th.

**FOSTER MACHINE COMPANY**
WESTFIELD, MASS.

*Fred P. Brooks,*
*Representative,*
*P. O. Box 941,*
*Atlanta, Ga.*

# HENDERSON'S ANSWER TO THE



# HIGH COST OF MAINTENANCE

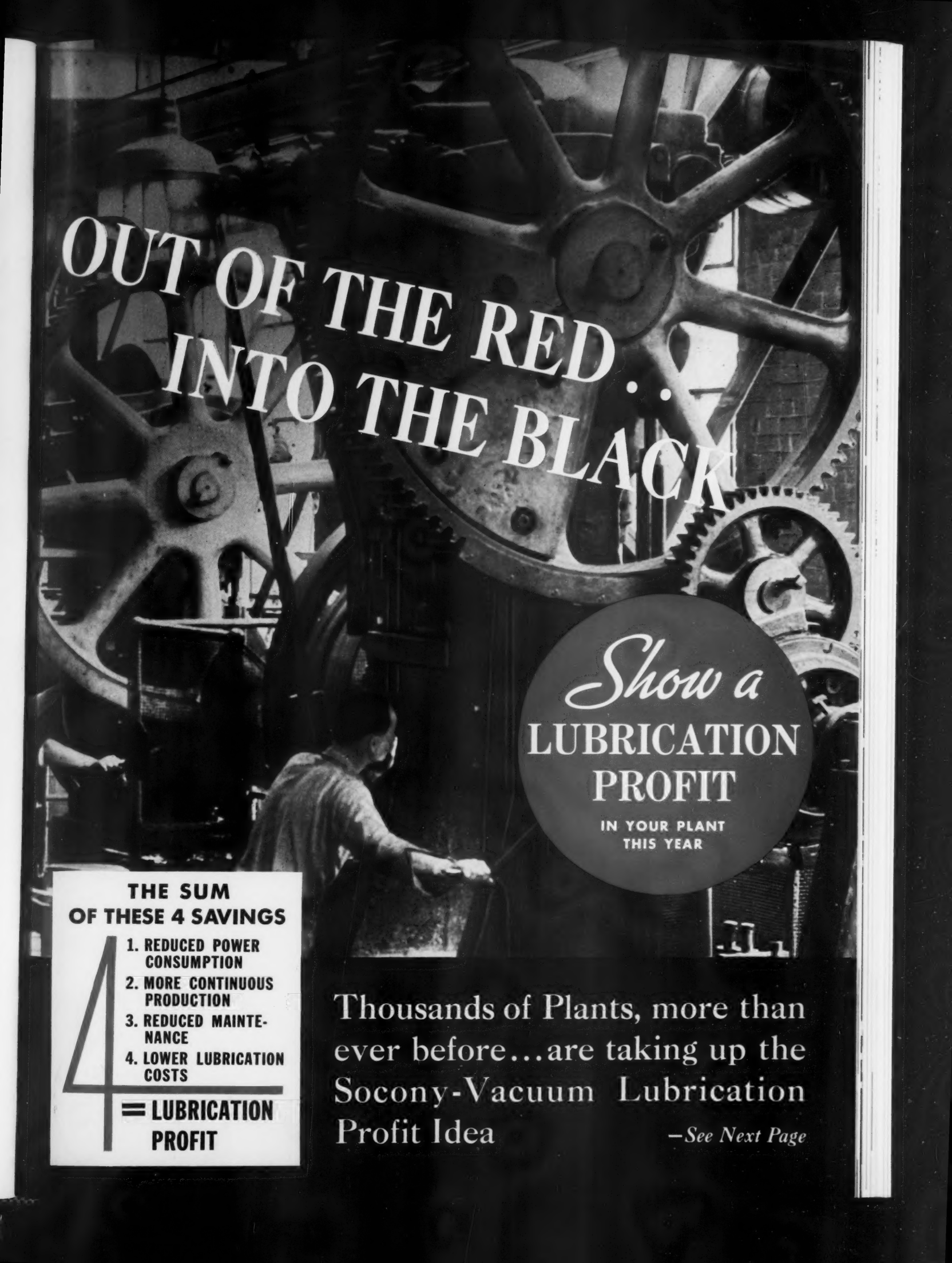
THE question of maintenance expense has become a big problem in many mills due to high speeds and striving for increased production. Machine parts need replacing more often and a missing part at a rush period may mean a serious loss.

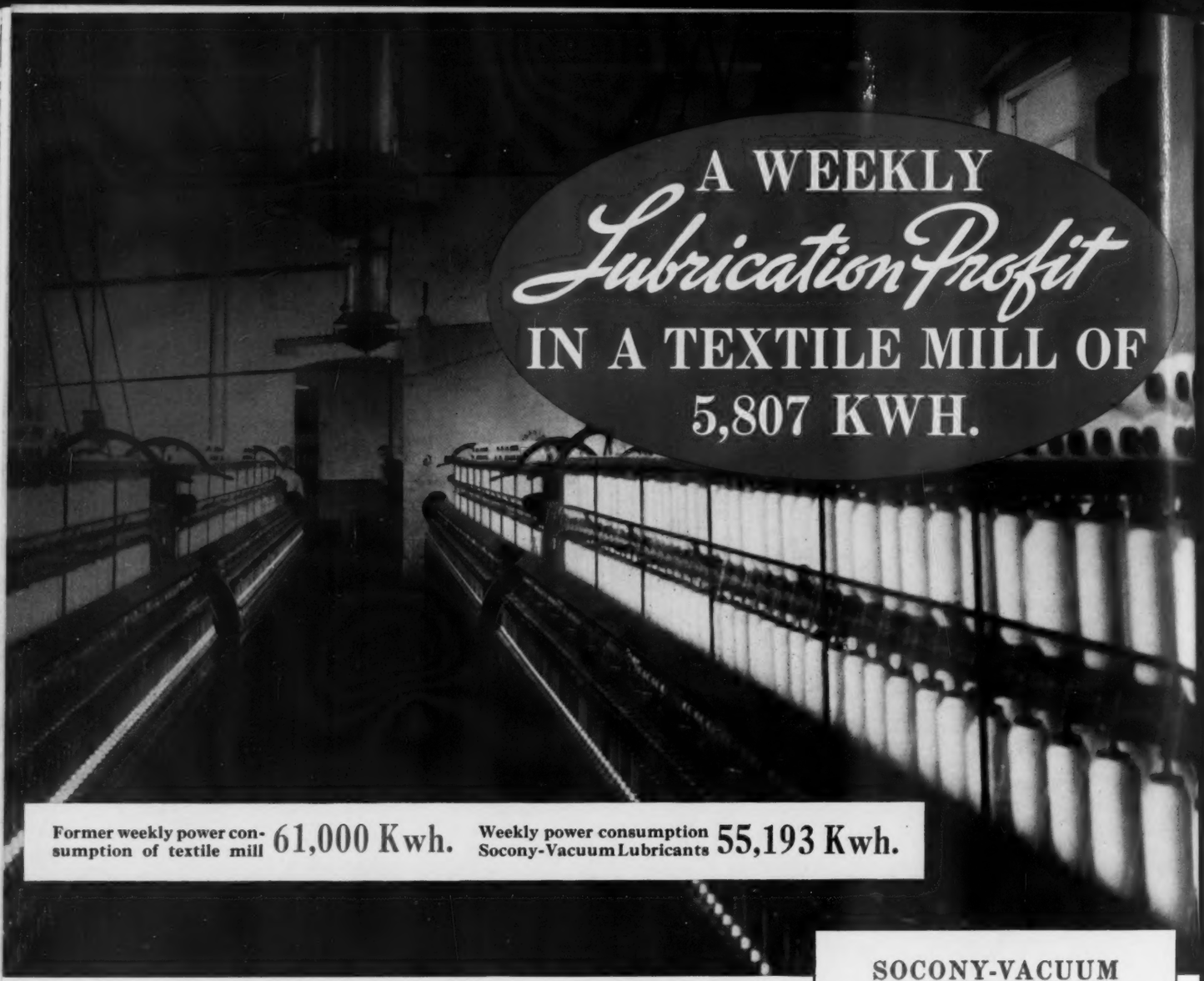
Henderson's answer to the high cost of maintenance is in repair parts that can "take it". These are not just ordinary replacement parts. They are made by textile experts with intimate knowledge of weak points in present-day textile machinery. They are made from precision patterns so that they fit accurately the machine for which they were intended. They are built to last longer under high speeds and strenuous operating conditions.

Such parts as these can help you reduce the high cost of maintenance in your plant. Check up your parts stock and be ready for any emergency. Quotations on any part or any quantity of parts gladly sent without obligation.

**HENDERSON FOUNDRY & MACHINE WORKS, HAMPTON, GA.**

# HENDERSON
## TEXTILE REPAIR PARTS


OUT OF THE RED . . .
INTO THE BLACK
Show a
LUBRICATION
PROFIT
IN YOUR PLANT
THIS YEAR
THE SUM
OF THESE 4 SAVINGS
4
1. REDUCED POWER CONSUMPTION
2. MORE CONTINUOUS PRODUCTION
3. REDUCED MAINTE-NANCE
4. LOWER LUBRICATION COSTS
= LUBRICATION PROFIT
Thousands of Plants, more than ever before...are taking up the Socony-Vacuum Lubrication Profit Idea
–See Next Page



# A WEEKLY *Lubrication Profit* IN A TEXTILE MILL OF 5,807 KWH.

**Former weekly power consumption of textile mill** 61,000 Kwh. **Weekly power consumption Socony-Vacuum Lubricants** 55,193 Kwh.

## OUT OF THE *Red* INTO THE *Black* IN INDUSTRIAL LUBRICATION

LUBRICATION that costs more than it should . . . that wastes power it shouldn't . . . that runs up repair bills . . . or interrupts productive operation . . . is *in the red.*

We are proud that Socony-Vacuum recognized this years ago, and took steps to build up every factor in its lubrication service that is needed to handle any lubrication problem on an "in the black" basis.

The Lubrication Profit point of view led to the development of Socony-Vacuum's complete line . . . to the world-famous Gargoyle line of highest-quality lubricants . . . to the world's largest library of data on lubrication . . . to constant consultation with the makers of new equipment.

It has led to the progressive Socony-Vacuum policy which refuses to sell on price alone where the result would be inefficient; which recommends lowest-cost lubricants where truly economical.

### SOCONY-VACUUM MARKETING POLICY

**INDUSTRY almost always finds that the controlled use of high-grade Gargoyle Lubricants pays for itself many times over and that they actually cost less to use than ordinary lubricants. But for such equipment as does not justify the highest-grade lubricants, Socony-Vacuum engineers will recommend a lower-priced lubricant consistent with true economy. Socony-Vacuum, with a complete line of products, can supply the lubricants best fitted for the requirements of the individual lubricating job.**

# SOCONY-VACUUM OIL CO

INCORPORATED

STANDARD OIL COMPANY OF NEW YORK • VACUUM OIL COMPANY • WADHAMS OIL COMPANY
WHITE STAR REFINING COMPANY • LUBRITE REFINING CORPORATION • WHITE EAGLE OIL CORPORATION
MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORPORATION OF CALIFORNIA

GARGOYLE
Lubricants

UNION SPECIAL
MACHINE COMPANY

400 N. Franklin Street Chicago, Illinois

# FOR YOUR INFORMATION —

●

In keeping with the forward-looking spirit of the Southern Textile Exposition, Toledo Scale Company will show in sections 460-461, a complete line of weighing equipment used throughout the textile industry.

In addition to the conventional models of Toledo Bench, Portable and Receiving Scales, there will be special textile scales and the latest type Toledo Printweigh, which furnishes quick, accurate, machine-printed weight records.

The Toledo exhibit will be under the personal supervision of Mr. W. M. Randolph, Manager of the Southern Zone, from Atlanta; and Mr. W. F. MacKinnon, Southeastern Manager from Charlotte, North Carolina.

## TOLEDO SCALE COMPANY
## TOLEDO, OHIO

NO SPRINGS HONEST WEIGHT

*181 Sales and Service Offices Throughout U. S. and Canada*

# DU PONT ANNOUNCES—

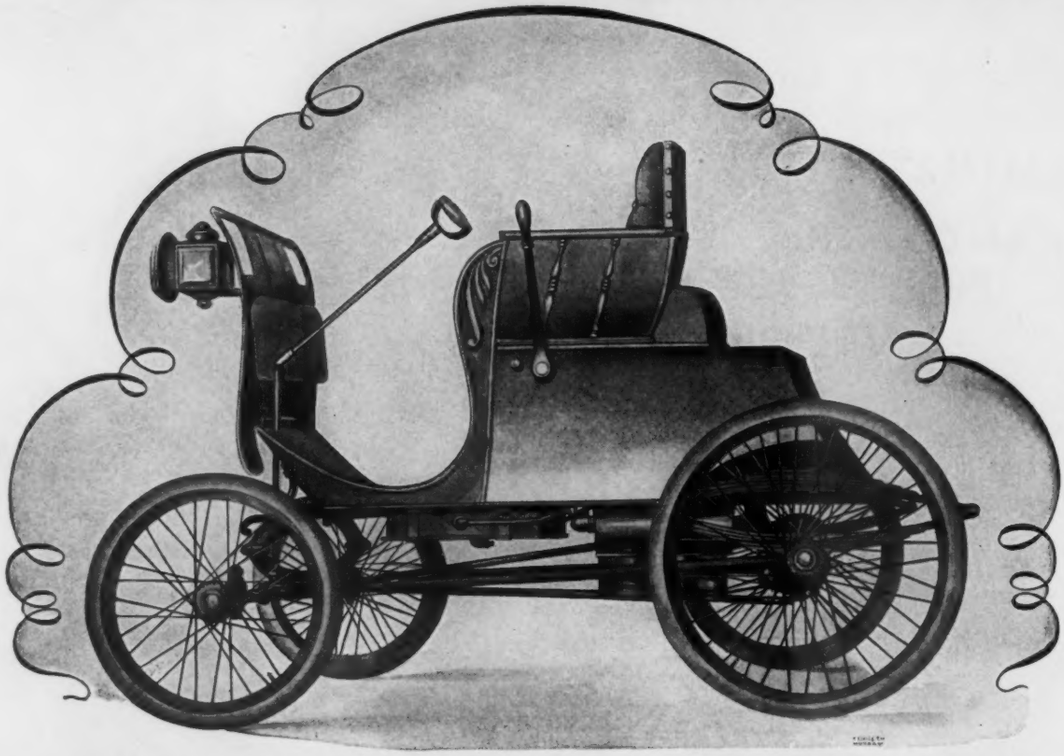
FOR SILK, RAYON or COTTON DRESS FABRICS. This color is developed with Beta Naphthol and when used as a self-color produces bright, clear orange shades with a decided reddish tone. Used as a shading color, will enable you to produce the rich, warm shades of brown so much in demand. This new dye is the result of months of experiment by du Pont's research laboratories. PONTAMINE Diazo Orange GR (Pat.) is very level dyeing and discharges well. It possesses very good fastness towards acid, hot pressing and crocking, and good fastness to light and alkalis. Send for a sample of this new dyestuff and test it out yourself.

*Reg. U. S. Pat. Off.

DU PONT DYESTUFFS

E. I. DU PONT DE NEMOURS & CO., INC.
ORGANIC CHEMICALS DEPARTMENT
DYESTUFFS DIVISION, WILMINGTON, DEL.

# *Modernize with* MONOBELT



## COMPETITION FORCES OBSOLESCENCE

It's in the museum now. This mechanical marvel of the vintage of '88 has been discarded for an up-to-date model. And rightfully so. For it has no place on a modern highway in competition with modern motor cars.

In your plant, are you nursing any feeble, antiquated, inefficient power transmission systems with the idea that by so doing you are reducing operating expenses?

That's false economy, for you are paying the modernization cost in excessive maintenance expense, higher power bills, and lower production figures.

You require modernized drives equipped with MONOBELT, because:

1. MONOBELT is scientifically made, guaranteeing a positive drive control with perfect balance. Excessive slippage is eliminated.
2. MONOBELT is factory-stretched and will immediately absorb shock loads.
3. MONOBELT is built to give efficient, economical performance and uninterrupted high-speed production.

Don't struggle along with obsolete equipment. The MONOBELT modernization facts are yours for the asking, see your dealer today or write direct to us.

Alexander Brothers INC.
PHILADELPHIA PENNSYLVANIA
Sign of Merit SINCE 1867

MEMBER POWER TRANSMISSION COUNCIL

# The 1935 Sanforized-Shrunk Campaign will reach 25,000,000 homes

★

**If you have not put in a Butterworth Sanforizer we suggest that you consider the question, *seriously NOW!***

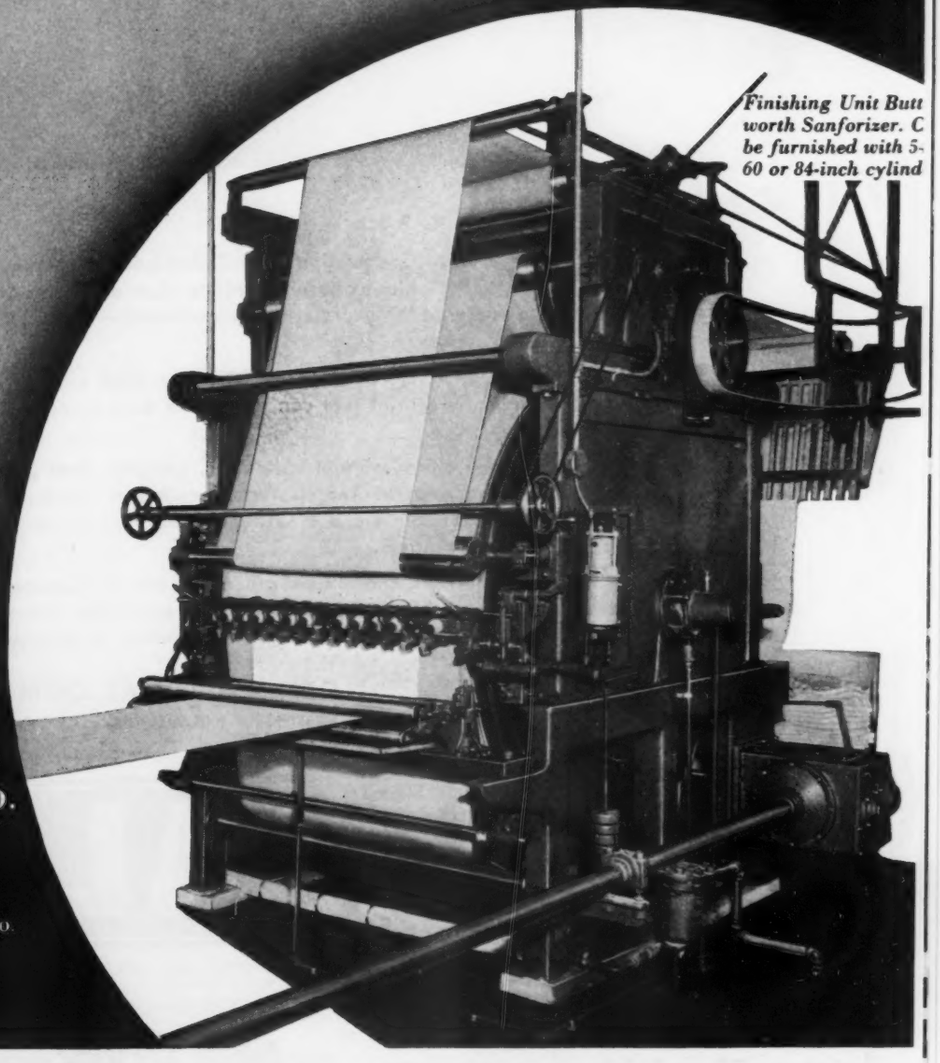
**26 National Publications will be used to tell the story of Sanforized Shrunk. Cluett Peabody Co., Inc., is sponsoring this tremendous campaign. It will make the men and women of the nation conscious of the value of buying *only* fabrics and apparel that *will not shrink.***

**Are you ready for this market? Let us help you meet the problem.**

**Butterworth Sanforizers are in use in the leading plants of the country*. Here is the reason why you, too, should turn to Butterworth for your Sanforizing Equipment. Our engineers are at your service.**

***Here's where they are operating***

Erwin Cotton Mills, Erwin, N. C.
Erwin Cotton Mills, Cooleemee, N. C.
The Union Bleachery, Greenville, S. C.
Pepperell Manufacturing Co., Lindale, Ga.
Pepperell Manufacturing Co., Lewiston, Me.
Delta Finishing Co., Philadelphia, Pa.
Lanett Bleachery & Dye Works, Lanett, Ala.
North Carolina Finishing Co., Salisbury, N. C.
Ramapo Finishing Corp., Sloatsburg, N. Y.
Ware Shoals Mfg. Co., Ware Shoals, S. C.
Fairforest Finishing Company, Spartanburg, S. C.
Highland Park Mfg., Co., Charlotte, N. C.
Robertson Bleachery & Dye Works, New Milford, Conn.
Summerdale Dye & Finishing Works, Holmesburg, Pa.
Lowell Bleachery, St. Louis, Mo.
Amoskeag Manufacturing Co., Manchester, N. H.
Arnold Print Works, North Adams, Mass.
Martin Dyeing & Finishing Works Co., Bridgeton, N. J.
Pacific Mills, Lyman, S. C.
Gregg Dyeing Co., Graniteville, S. C.



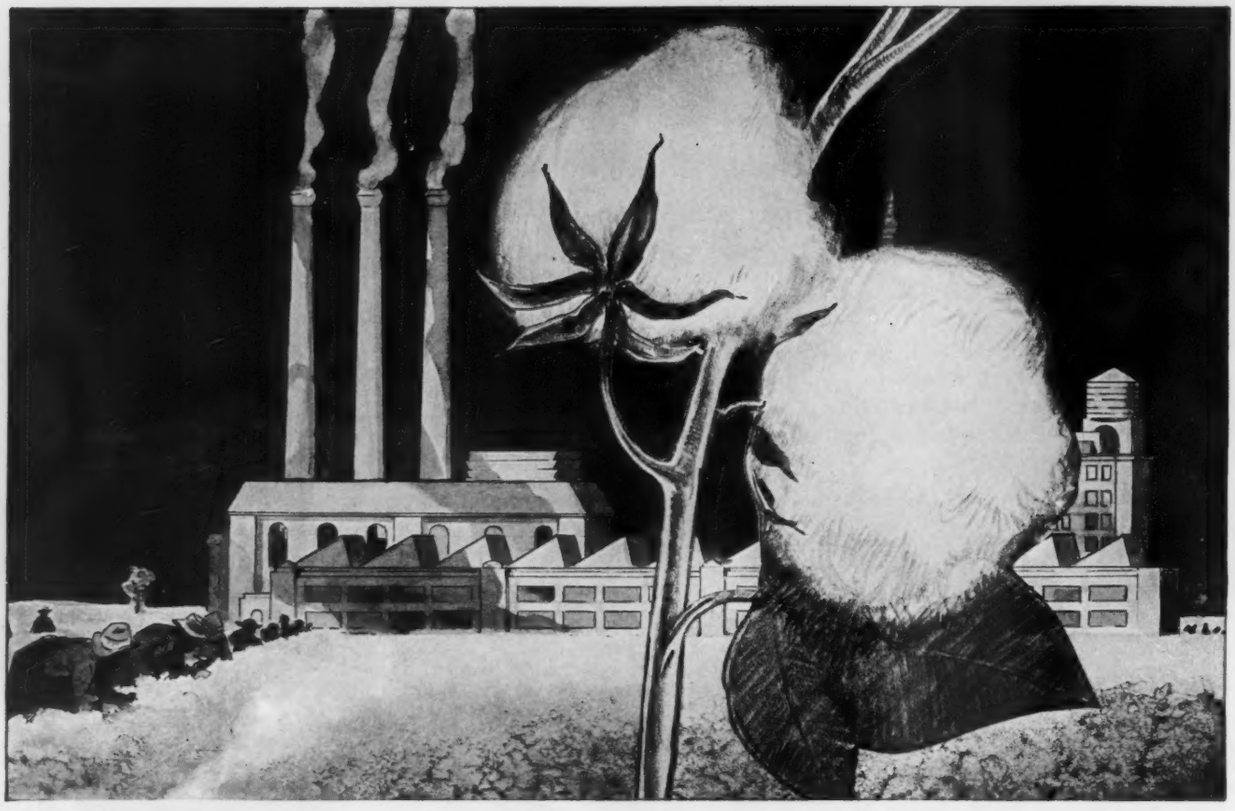
*Finishing Unit Butt worth Sanforizer. C be furnished with 5- 60 or 84-inch cylind*

**I. W. BUTTERWORTH & SONS CO.**
*Established 1820*
PHILADELPHIA, PA.
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

*New England Office:* TURKS HEAD BUILDING Providence, R. I.
*Southern Office:* JOHNSTON BUILDING Charlotte, N. C.
*In Canada:* W. J. WESTAWAY CO. Hamilton, Ontario

# BUTTERWORTH *finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY



# Red Ink Fuel . . or Black?

Codification of the Cotton Industry has placed a premium on efficient plant operation. Modernization of production methods and machinery operates directly on the profit and loss statement — as a major contributing factor to a profitable earnings report.

No plan of modernization is complete or fully operative unless it includes a complete and exhaustive fuel survey. The right fuel *can* and *often does* mean the difference between red and black ink on the ledgers.

General Coal Company offers, without obligation, complete fuel surveys conducted by recognized fuel engineering experts. The strategic location of General Coal properties and the wide range of coals available make a General Coal Fuel Survey really mean something in the way of service for fuel users.

Get in touch with the nearest General Coal office and see if a General Coal Survey of your fuel requirements doesn't lead to some outstanding fuel economies. We repeat — there is no obligation and it is to your interest to discover right now whether or not you are buying "red ink" fuel.

**GENERAL COAL COMPANY**

BOSTON PHILADELPHIA CHARLOTTE, N.C.

DETROIT CINCINNATI NEW YORK PITTSBURGH BUFFALO RICHMOND IRWIN, PA.

# GENERAL COAL

Admiralty Coal — The famous New River Smokeless low volatile steam coal

STONEGA — A coal "buy word" in the South for years

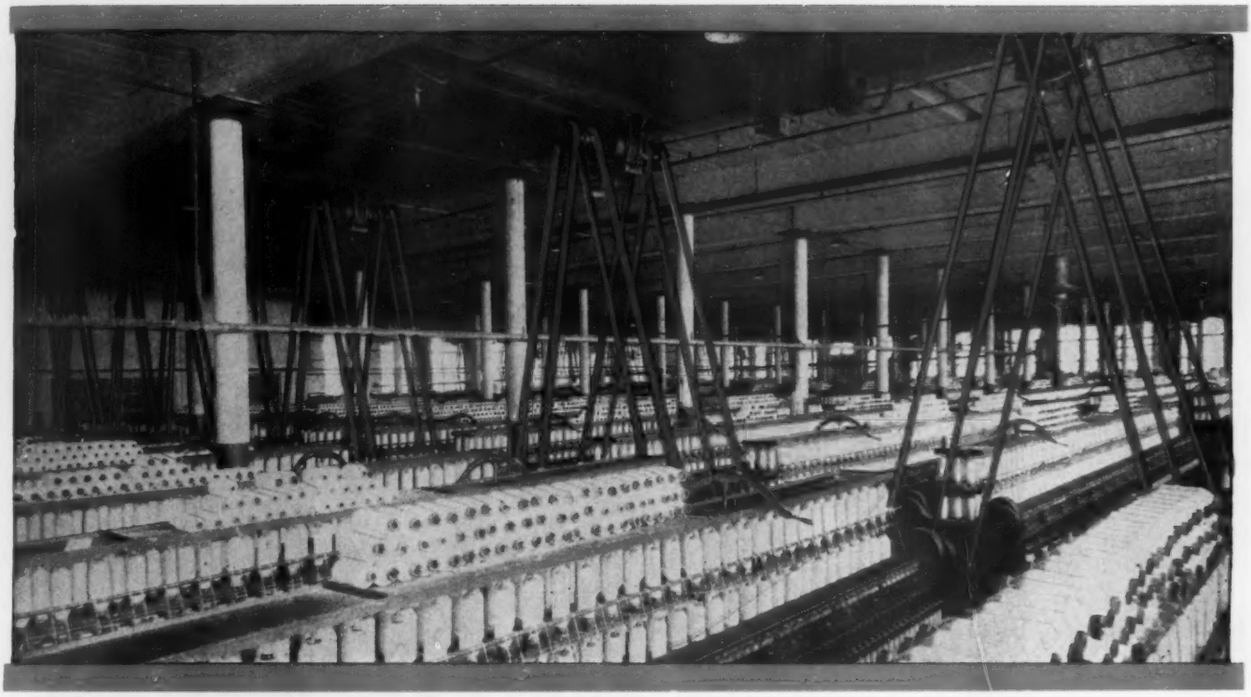
GENCO — An excellent stoker fuel

DENDRON RODA — Low ash—high B. T. U. Pulverized Fuels

CROZER — A standard Pocahontas smokeless low volatile steam coal

PREMIX STOKER — The ideal stoker fuel

CRITERION COAL — A high volatile steam and general use coal



The superintendent of this mill says that Tannate is the most satisfactory belt he has ever used on his four-frame spinning drive. The flexibility and extra grip of Tannate running over small pulleys at high speeds gives more turns on front rolls and much longer life than other makes of belting. They also use Tannate on looms and on motor and counter drives.

**Don't fail to see the two instructive belt testing machines in the Rhoads Exhibit at**

## BOOTHS 245-246
## SOUTHERN TEXTILE EXPOSITION, GREENVILLE, S. C.
## APRIL 8th to 13th, 1935

● One of these machines compares the losses in a V-Belt installation with a Tannate Leather Belt Drive. This machine created much interest at other exhibits and is well worth a call at the Rhoads booth.

● The other machine compares slip of various belts at equal loads and tensions and reveals the ability of Tannate Leather Belt to increase production without increasing operating cost.

● These machines, in very simple manner, show some of the advantages of Tannate Leather Belting—the belting that possesses an unusual combination of desirable belt qualities which has made an enviable reputation for solving hard belt problems when other belts have failed.

● This combination of strength, resiliency, pliability and tractive grip make for longer belt life, fewer stops for take-ups and repairs, and a freedom from slip that conserves power and increases production.

● In Modern Group Drive set-ups, Tannate Leather Belting can play an important part in giving low operating and maintenance costs. Also in these Modern Group Drives, you can often save space and increase efficiency by using Rockwood pivoted motor base drives in connection with Tannate Leather Belting. Specify these when plans are drawn for new installations or for modernizing older ones.

● Should you desire further information about Tannate Leather Belting or Modern Group Drives, please write us.

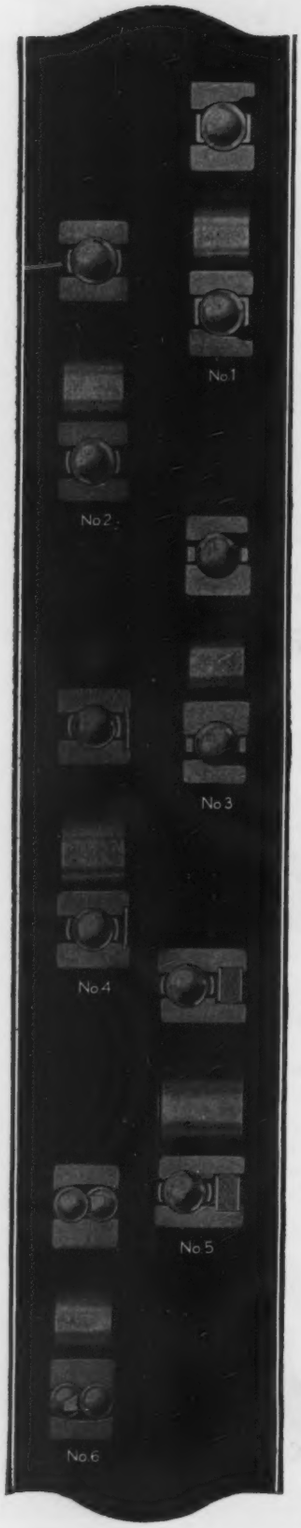
## J. E. RHOADS AND SONS

PHILADELPHIA, 35 N. Sixth St.

NEW YORK 102 Beekman St. | CHICAGO 26 N. Clinton St. | ATLANTA 88 Forsyth St., S.W. | CLEVELAND 1200 W. Ninth St.

# RHOADS TANNATE BELTING

# PRECISION




## FOR PRODUCTION AT LOWER COST

In comparing values, let proved performance be the deciding factor. Look beyond first cost, to the ultimate cost over a period of years. * * * For 20-odd years, in every field of industry, Norma-Hoffmann **Precision** Bearings have been making distinguished records for unfailing dependability—records which command the confidence of those seeking the lower production costs that come with the use of better bearings.

### APPLICATIONS OF PRECISION BEARINGS IN TEXTILE MACHINERY

| | | |
|---|---|---|
| Agers | Looms | Spinning Machinery |
| Beaters | Mules | Spoolers |
| Breakers | Nappers | Tenters |
| Brushing Machines | Openers | Twisters |
| Calenders | Pickers | Warpers |
| Cards | Rayon Machinery | Washers |
| Drying Machines | Shears | Winders |
| Dyeing Machines | Silk Machinery | Wool and Worsted Machinery |
| Extractors | Slashers | |
| Garnetts | | |

### PRECISION BEARINGS
**For Every Load, Speed and Duty**

No one type of bearing is so versatile in its operating characteristics that it will meet all the wide diversity of duties in the textile industries. From the comprehensive **Norma-Hoffmann** line, however—here illustrated in part, and briefly indexed—a **Precision** Bearing, or several in combination, can be chosen that will satisfy almost any conditions of operation.

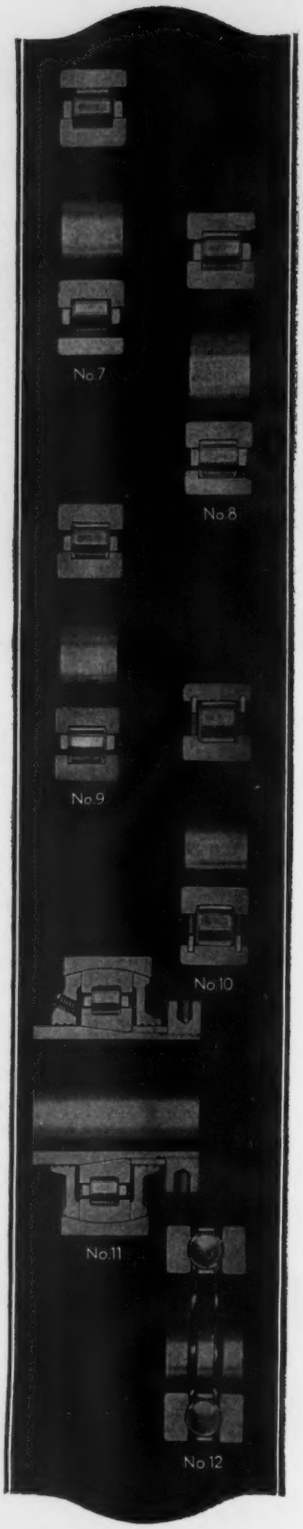
1. Open (separable) type ball bearing.
2. Closed radial type ball bearing.
3. Angular contact ball bearing.
4. Single-plate, grease-retaining, dirt-excluding ball bearing; available in double-plate type also, fully enclosed.
5. "Greaseal" felt-protected ball bearing; available also with double felt seal, or with side plate, both fully enclosed.
6. Double-row, self-aligning ball bearing; also furnished with adapter sleeve and nut.
7. Standard cylindrical roller bearing.
8. One-lipped cylindrical roller bearing.
9. Two-lipped cylindrical roller bearing.
10. Full type (retaining ring) cylindrical roller bearing.
11. Self-aligning adapter type cylindrical roller bearing with grease-retaining, dust-and-moisture-excluding side plates.
12. Ball thrust bearing.

*Write for the Catalog. Let our engineers work with you.*

**NORMA-HOFFMANN BEARINGS CORPORATION**
**Stamford, Conn., U. S. A.**

**"NORMA-HOFFMANN"**

**Booths 451 and 452, Southern Textile Exposition**




# BEARINGS

★Here's HOW THEY ARE **SAVED**

Where your V-belt bends around its pulley—where it grips the sheave to pull its load—*that's* where the story of its efficiency is told!

When any V-belt bends, it is forced to *change* its *shape.* The top, under tension, becomes narrower. The bottom, under compression, grows wider. Figure 1 (right) shows the resulting shape-change in a straight-sided belt. Note the out-bulge of the sides. Now look at Figure 2. There you see how the patented concave side is *precisely engineered* to compensate the shape-change due to bending.

Results? The V-belt with the concave side bends to an *exact fit* in the sheave groove. There is no out-bulge at the sides. This means uniform wear—longer life—*economy.* The full side-wall uniformly grips the pulley, carrying heavier loads without slippage—a big increase in drive efficiency.

The Gates Vulco-Rope Drive is the *only* V-belt built with the patented concave side.

WHAT HAPPENS *When a* V-Belt **BENDS**

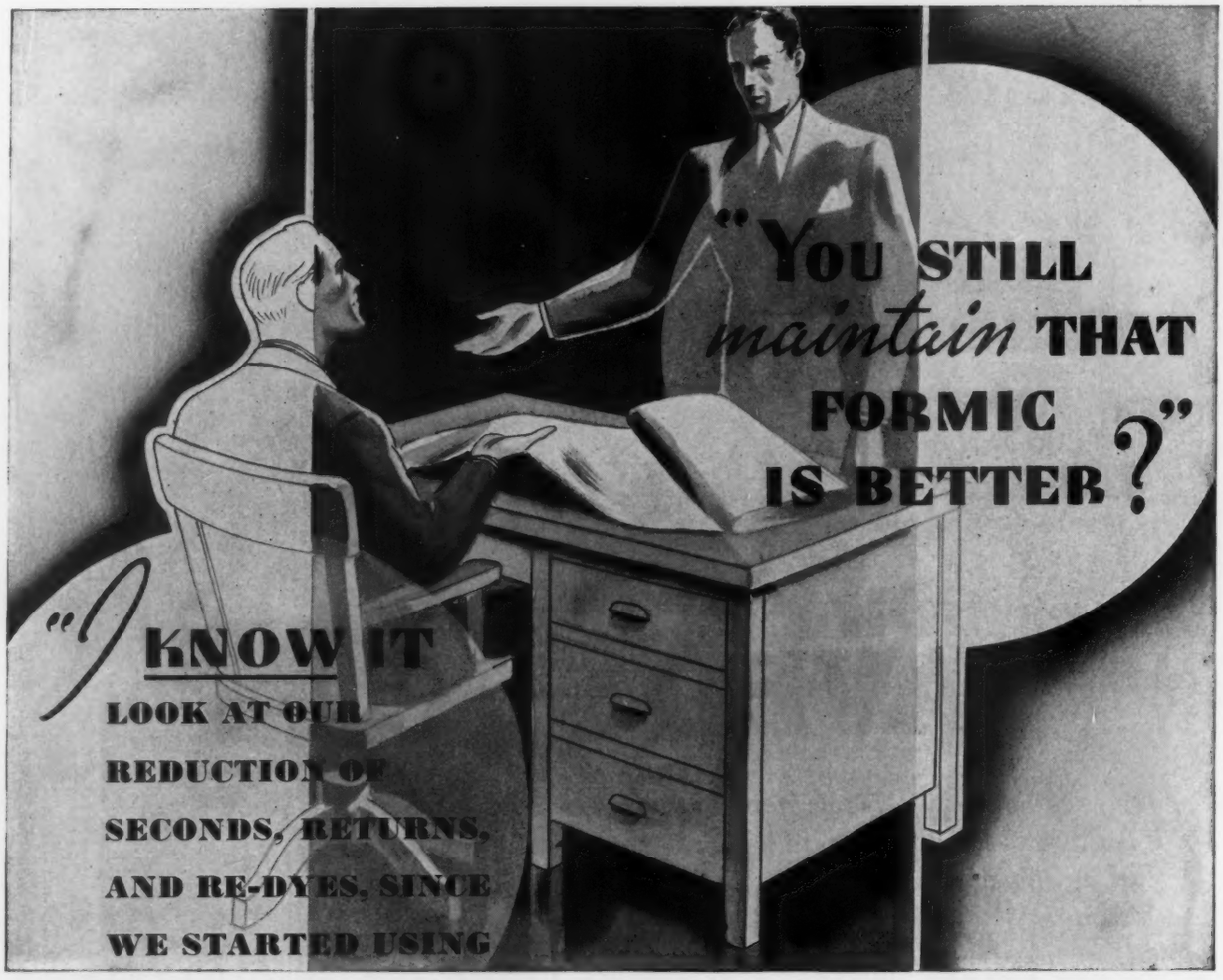
Fig. 1. *Straight-Sided Belt*

Fig. 2. *Belt with Patented* CONCAVE *Side*

THE GATES RUBBER CO.
*Factory Branches:*
Terminal Bldg.
HOBOKEN, N. J.
1524 So. Western Ave.
CHICAGO
747 Warehouse St.
LOS ANGELES
2213 Griffin St.
DALLAS
999 So. Broadway
DENVER

***Engineering Offices and Stocks in All Large Industrial Centers***

**GATES VULCO ROPE DRIVES**


"YOU STILL maintain THAT FORMIC IS BETTER?"
"I KNOW IT
LOOK AT OUR REDUCTION OF SECONDS, RETURNS, AND RE-DYES, SINCE WE STARTED USING

# GRASSELLI FORMIC ACID

● You, too, will be uniformly gratified with the improved results and brighter shades from many of your dyeing operations; even in cross-dyeing, you can produce dyed fabrics that are perfectly level, when you have GRASSELLI Formic Acid in the dyebath. Streaky, cloudy colors are eliminated; and no matter how delicate the fabrics, they cannot be tendered by this mild, safe acid.

GRASSELLI Formic Acid, 85% and 90%, not only produces superior results, but saves expensive dyestuffs as it completely exhausts the dyebath. Moreover, it is volatile on drying.

Let GRASSELLI Formic aid you in securing level, brilliant colors in your dyed fabrics. Any Grasselli branch can supply you—there's one near you.

**LET US ALSO QUOTE YOU ON**

Acetic Acid
Acetate of Soda
Acetate of Lead
Alums, U. S. P.
Aqua Ammonia
Barium Chloride
Bi-Chromate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda Solid and Flake
Chloride of Lime
Chloride of Zinc
Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
Sulphate of Alumina
Sulphate of Soda, Anhydrous
Sulphite of Soda
Sulphide of Soda
Sulphuric Acid
Tri-Sodium Phosphate

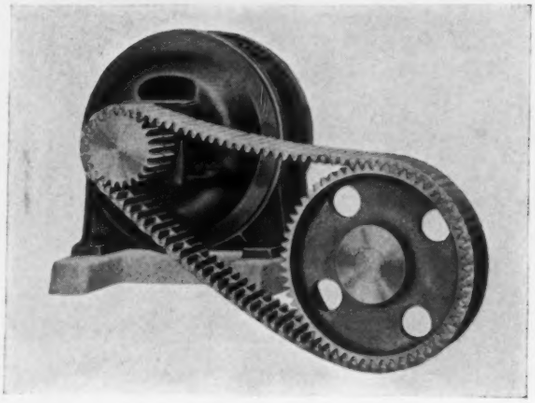
**THE GRASSELLI CHEMICAL COMPANY, INC.**
**Founded 1839** *Subsidiary of E. I. DuPont de Nemours & Co., Inc.* **Cleveland, Ohio**
**New York and Export Office: 350 Fifth Avenue**

BRANCHES AND WAREHOUSES:

Albany, Birmingham, Boston, Charlotte, Chicago, Cincinnati, Detroit, Milwaukee, New Haven, New Orleans, Philadelphia, Pittsburgh, St. Louis, St. Paul
San Francisco, 584 Mission Street
Los Angeles, 2260 East 15th Street

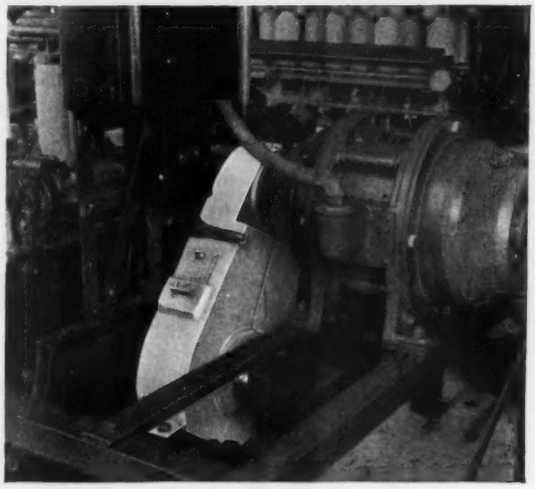
Represented in Canada by CANADIAN INDUSTRIES, LTD.
Acids and General Chemicals Division—Montreal and Toronto

# *It pays to be* POSITIVE *in* POWER TRANSMISSION

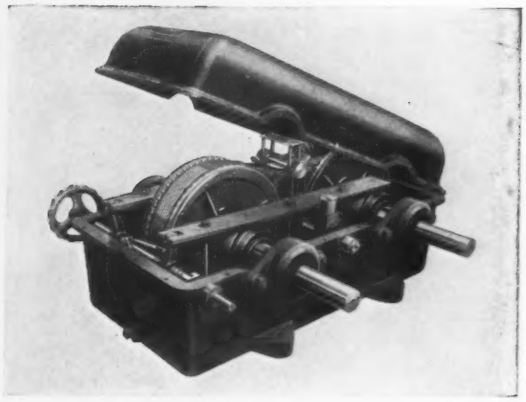


## Link-Belt Silent Chain Drive

Link-Belt Silverstreak silent chain through its smooth, uniform transmission of all of the power of the motor, assures a uniformity of product not possible with drives that slip; and its uniformly positive action serves to maintain production at a predetermined rate. Send for Engineering Data Book No. 125 and Pink Stock List No. 725.

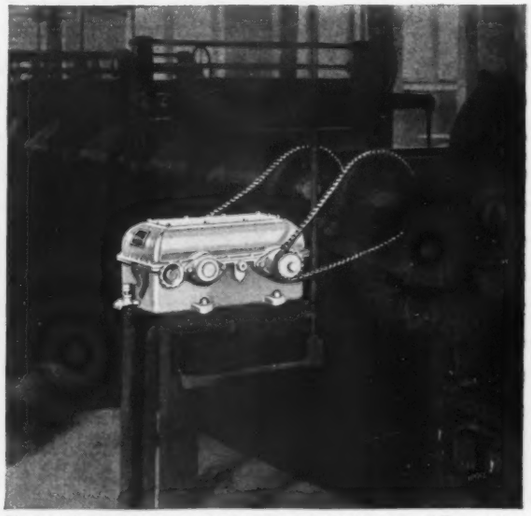


The cool running Link-Belt Silverstreak silent chain drive, operating in the TEX-TIL type automatic-lubricating oil-leak proof casing.



## P.I.V. GEAR
## Variable Speed Transmission

Where positive Variable Speed Control is required, the Link-Belt P.I.V. gear will provide and maintain fractional revolution changes at the simple turn of a handle, through a unique positive chain drive, without steps or dependence upon friction. Send for catalog 1274 on the P.I.V. gear and catalog 1374 on the V.R.D. (variable roller drive) a variable transmission for fractional horse power drives.



The Link-Belt P.I.V. gear — Positive Infinitely Variable Speed Transmission.

**LINK-BELT COMPANY** 5213

The Leading Manufacturer of Positive Power Transmitting Equipment

PHILADELPHIA ATLANTA CHICAGO INDIANAPOLIS
BOSTON NEW YORK BALTIMORE DALLAS NEW ORLEANS
SAN FRANCISCO Offices in Principal Cities TORONTO

# LINK-BELT POSITIVE DRIVES

See Our Exhibit at Southern Textile Exposition, April 8-13, 1935, Greenville, S. C., Space 220

# It Costs You Money to Tie His Hands

• Every time you refuse your plant engineer's request for replacements you may be tying his hands and costing yourself money. Your plant cannot be operated at maximum efficiency with worn-out or obsolete equipment. Penny leaks grow into dollar losses.

Before you say "no" to plant expenditures make a thorough checkup with your engineer. To minimize interruptions in service and secure general economy in maintenance, assure yourself that valves and fittings are selected for the particular service to be performed, that your piping is properly sectionalized. Guard against the small losses that grow into high production costs.

A new Crane steam trap here, replacement of a pipe line there, may mean the difference between red and black figures on your books. A silk mill in New York state revamped its boiler room, using Crane material exclusively, at an expense of approximately $1,000. It is now operating its plant at a saving of 10% in fuel and has increased plant production 30% *without adding any extra equipment!*

For seventy-nine years, sturdiness and precision of a character peculiarly Crane's have been built into our valves, fittings and fabricated piping. They are distinguished by long and efficient performance.

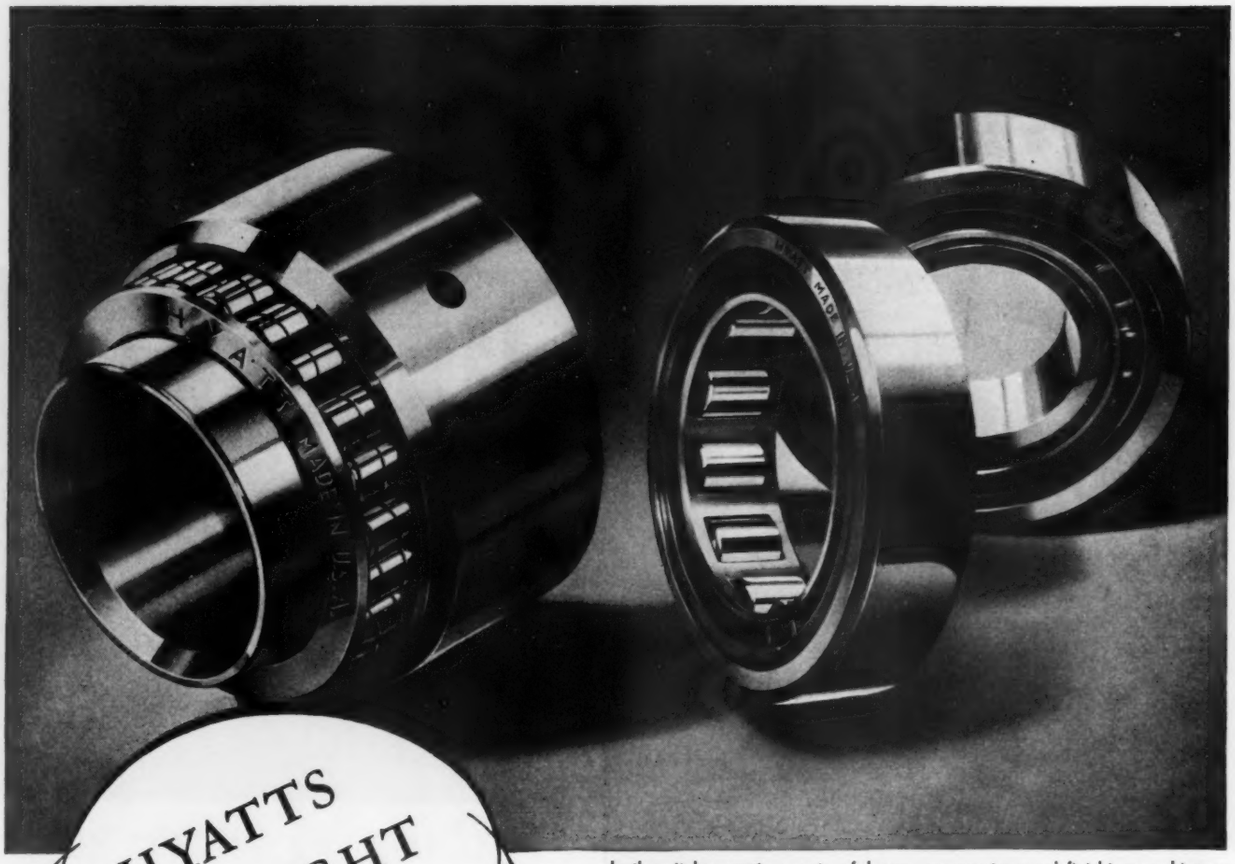
Crane engineers will gladly co-operate to show you many avenues to plant economy and efficiency. We will send you without obligation our Plant Checkup List. Write for it today.

# CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS NEW YORK: 23 W. 44TH STREET

*Branches and Sales Offices in One Hundred and Sixty Cities*

VALVES FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL



In the vital operating parts of looms, preparatory and finishing machines, Hyatts are eliminating bearing wear and care. Most builders employ Hyatt Roller Bearings as regular equipment or can furnish them when specified.

# HYATTS ARE RIGHT *from the* START

In product design, product manufacture and product application Hyatt factory and field forces are diligently striving to keep Hyatt Roller Bearings not only abreast of demands but as far out in front as possible.

Throughout the many years Hyatt Roller Bearings have been serving and saving, three outstanding reasons are responsible for their widespread use. Continuous development of correct design, quality manufacture and sound application engineering.

Thus with Hyatt Roller Bearings right from the start—designed right, built right, and applied right—you have the answer to dependable performance wherever these better bearings are used. Hyatt Roller Bearing Company, Newark, Detroit, Chicago, Pittsburgh, Oakland.

# HYATT
## ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

# *There is no Substitute for Experience*

## "HIGH GRADE"

BOBBINS
SPOOLS · ROLLS
CONES · SKEWERS
AND SHUTTLES
OF EVERY DESCRIPTION

FIFTY-TWO years ago, the David Brown Company started to meet the requirements of the textile industry for better bobbins and shuttles. Today, we are serving many customers whose first orders were placed with us when our organization was founded.

For fifty-two years we have faithfully served these customers, and year-after-year since then new customers have gradually come to recognize "HIGH GRADE" as the highest standard of quality in bobbins, spools, skewers, rolls and shuttles.

There's a representative near you who can supply your requirements quickly and with perfect satisfaction. May we serve you, too?

# *The* DAVID BROWN Co.

*MAIN OFFICE AND FACTORY*

LAWRENCE, MASS.

*SOUTHERN REPRESENTATIVES:*

*Ralph Gossett, Wm. J. Moore,* 904 Woodside Bldg., Greenville, S.C.
*Belton C. Plowden, Griffin, Ga.*
*Russell A. Singleton, Dallas, Tex.*
*Gastonia Mill Supply Co., Gastonia, N. C*
*James Supply Co., Chattanooga, Tenn.*
*S. F. Jones, R. A. Brand* 212 Johnson Bldg., Charlotte, N. C.
*J. R. Plowden, Birmingham, Ala.*

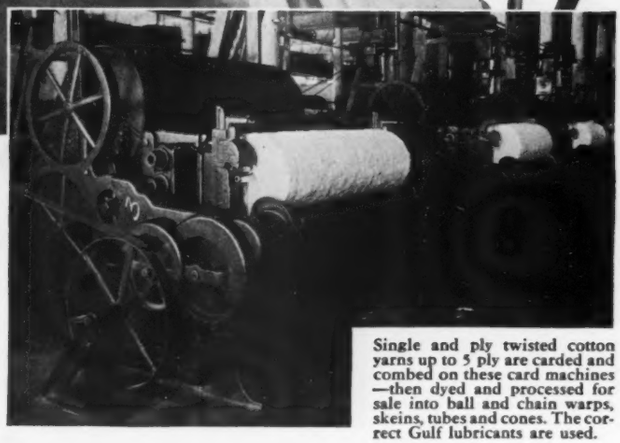
# "GULF LUBRICANTS HELP US KEEP MAINTENANCE COSTS DOWN"

. . . *says* R. L. HARRIS, SECY., ROXBORO COTTON MILLS

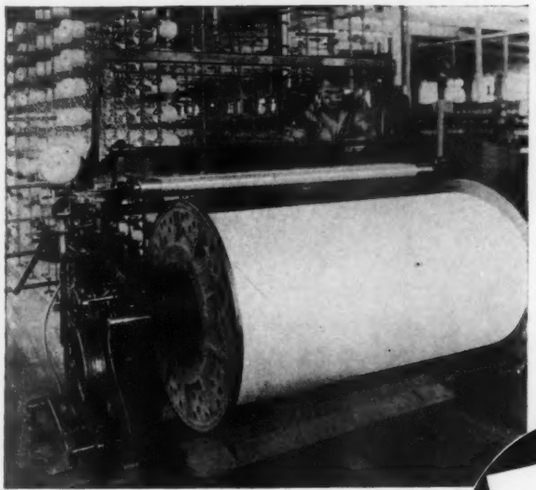
J. A. Long, Pres., Roxboro Cotton Mills

R. L. Harris, Secy., Roxboro Cotton Mills

## Leading mills throughout the country get substantial savings through GULF'S scientific lubrication plan.



Single and ply twisted cotton yarns up to 5 ply are carded and combed on these card machines —then dyed and processed for sale into ball and chain warps, skeins, tubes and cones. The correct Gulf lubricants are used.



Gulf Security Oil B is used to keep warpers like this running smoothly and economically. Friction is eliminated and repairs held to a minimum.

THE ROXBORO COTTON MILLS operate two cotton spinning mills at Roxboro and Longhurst, N. C., with an aggregate of 39,600 ring spinning and ring twisting spindles. The management of this company states that Gulf oils and greases, which they have used exclusively since 1923, have given them definite operating savings.

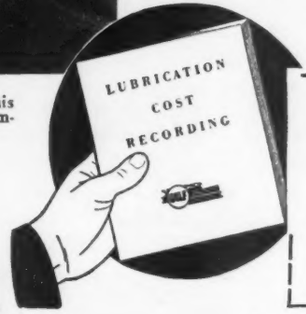
Gulf's complete range of oils and greases permits the selection of the most efficient lubricant for each machine and moving part. That is why leading cotton mills are turning to Gulf for quality lubrication and trained engineering knowledge.

Apply Gulf's scientific cost-cutting plan to *your* mill. This modern lubrication plan will bring reductions in your operating expenses. The booklet shown below tells how to set up simple cost records in your mill. Send for your copy.

## GULF REFINING COMPANY, Pittsburgh, Pa.

*District Sales Offices:* BOSTON · NEW YORK · PHILADELPHIA · ATLANTA
NEW ORLEANS · HOUSTON · PITTSBURGH · LOUISVILLE · TOLEDO

GULF INDUSTRIAL LUBRICATION




GULF REFINING COMPANY, C-4
3800 Gulf Building, Pittsburgh, Pa.

Please send me without obligation, the booklet "Lubrication Cost Recording."

Name.....

Title.....

Company.....

Address.....

## We Will Exhibit In

# SPACE 250

## At The Southern Textile Exposition

●

## The Gyrator Cleaning, Blending and Distributing Machine

The perfect cleaner for taking leaf, speck, light motes and dust out of cotton. A single machine which in one operation cleans the cotton, blends it thoroughly and distributes it perfectly to the pickers.

●

## The RIHCO Humidifying System

The simplest, most efficient, and most economical humidifying equipment. A system which really gives:

*"More Moisture for Less Money"*

●

## A Pipeless Picker

Requiring no dust room, but recirculating the air within itself on an entirely new principle which makes evener and better felted laps. These pickers permit the humidification of a picker room with as accurate control of humidity as in any other department.

●

Be Sure To See These Really New Developments.

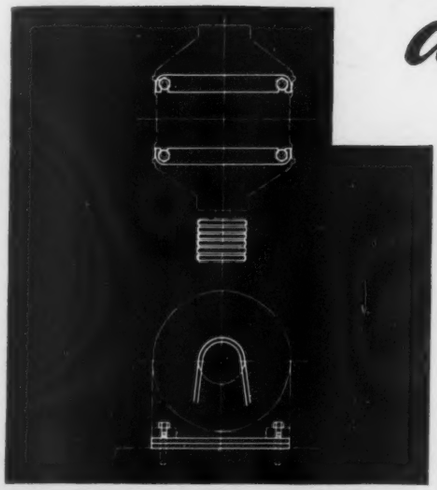
●

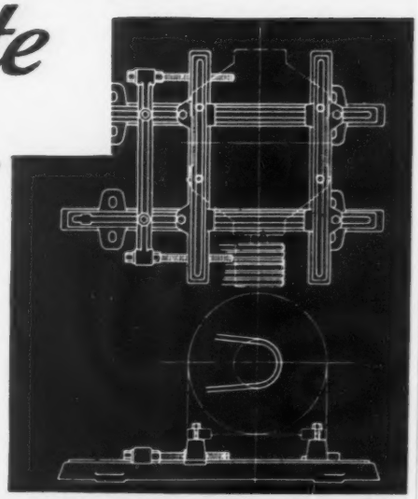
AldricH MachinE

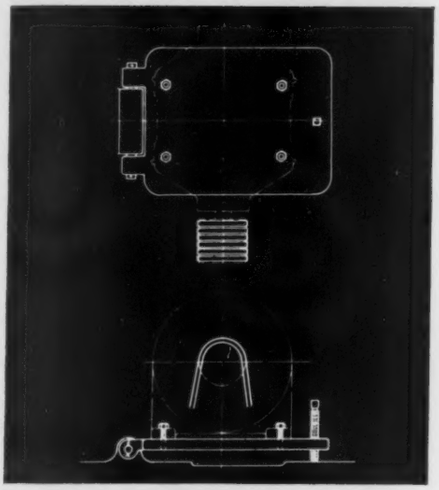
Greenwood, WorkS South Carolina

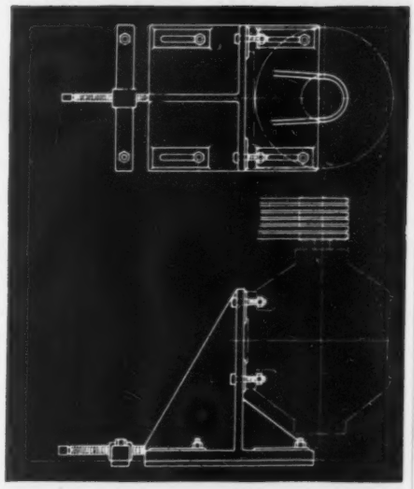
# TEXROPE DRIVES

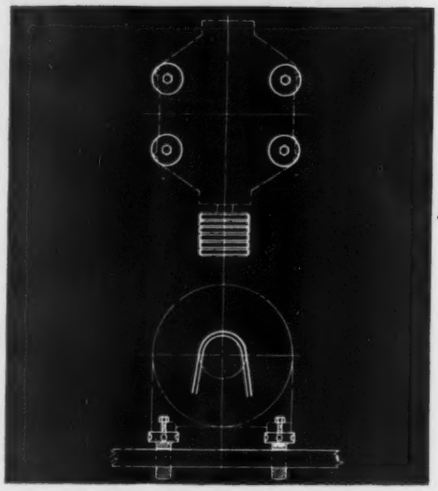
## *accommodate themselves*

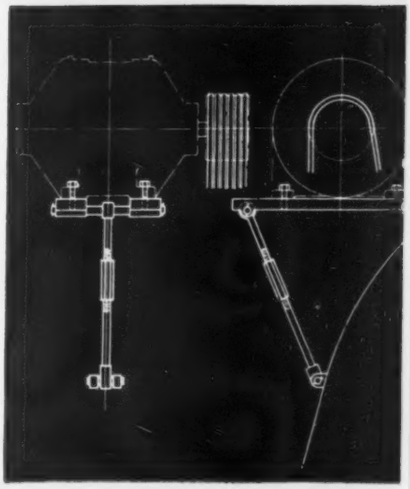












●

If you want flexible power transmission—transmission that will adapt itself to machinery mountings in any direct position—then you want Texrope Drives.

●

Texrope Drives accommodate themselves to machinery layouts, rather than compelling you to accommodate machinery layouts to suit driving arrangements.

●

Texrope Drives are 98.9% efficient . . . Require no belt dressing or lubrication . . . Are unaffected by moisture or dust . . . Are Vibrationless, Slipless, Silent—and as clean as a hound's tooth.

●

The new Duro-Brace Texsteel sheaves have outside walls reinforced by convex steel plates, eliminating distortion . . . giving a true running, vibrationless drive.

●

Texrope Drives, including the new Duro Brace sheaves, and other Allis-Chalmers Textile equipment will be displayed in Section 132-B at the Southern Textile Exposition.

**ALLIS-CHALMERS**
**MANUFACTURING COMPANY**
MILWAUKEE, WISCONSIN

**TEXROPE DRIVES**

ORIGINATED BY ALLIS-CHALMERS

# Seal-Clad

This motor is specially designed for use in the textile industry. It is of the open type, Seal-Clad, and requires no screens or other devices for excluding lint or dust. Unobstructed air passages and smooth surfaces of all parts in the air paths permit free travel of lint or dust with the ventilating air.

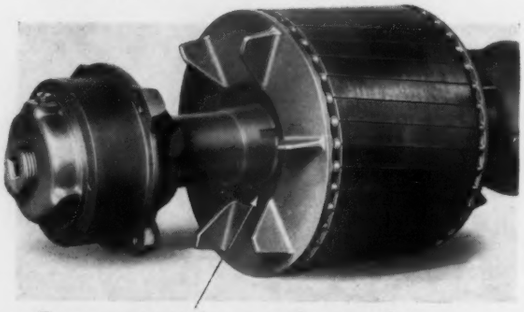
●

The stator windings are covered at both ends with Bakelite Shields, providing a smooth hard surface to which lint will not adhere. The integrally cast rotor fans are so shaped as to eliminate pockets where fly could collect. Discharge openings for the cooling air are large and smooth leaving no sharp edges. Motor housings have unrestricted inlet openings with smooth interior surfaces free from irregularities that would provide lodgment for fly.

●

In addition this design provides for cartridge type ball bearings, waste packed, or ring oiling type, long leads for flexible conduit, and straight or tapered shaft extension.

The stator windings are Seal-Clad. Bakelite shields at both ends protect the windings and provide a smooth, hard surface to which lint will not adhere.

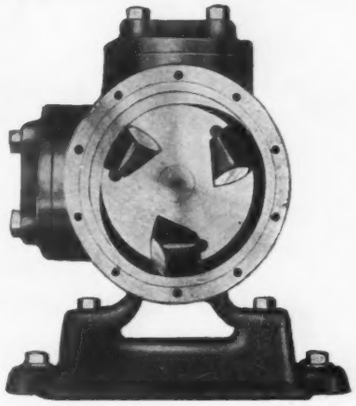


Rotor construction provides complete enclosure which prevents the entrance of lint or dust in the rotating element.

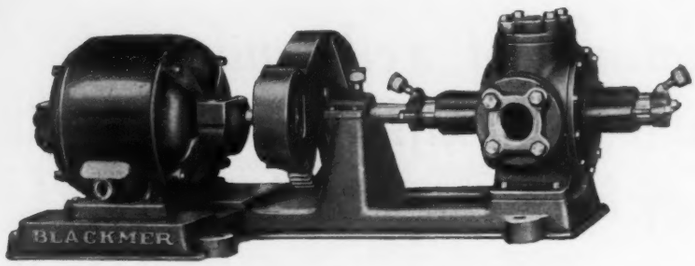
**ALLIS-CHALMERS**

Allis-Chalmers Manufacturing Company, Milwaukee

# CONSIDER ROTARY PUMPS



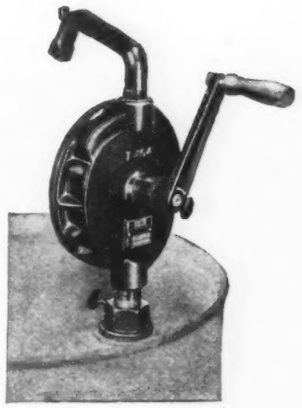
Your liquid handling problems can be solved by using BLACKMER ROTARY PUMPS — nearly thirty years of constant research and development of the original BLACKMER principle of operation have made BLACKMER the outstanding rotary pumps. They are as positive as a reciprocating pump and compact as a centrifugal — no other design has so many advantages — their high efficiency and low power cost is due to the hydraulic balance of the "Buckets" — they give long, trouble-free service as the bucket design incorporates automatic-take-up-for-wear — low maintenance cost is assured by the inexpensiveness of the buckets and the ease with which they may be replaced. Coupled with this exclusive BLACKMER feature is the "Lined" pump construction originated by BLACKMER. When ordinary pumps fail the entire pump must be replaced — BLACKMER "Lined" pumps eliminate this expensive maintenance — any of the working parts and wearing surfaces of these pumps may be replaced in a short time by anyone of ordinary ability and without the use of special tools and without disturbing the piping — a BLACKMER "Lined" pump will handle your sizing with a minimum of interruptions and expense and will justify our slogan of "MORE GALLONS PER DOLLAR."




**Single electric units are available in capacities of from 5 to 700 gallons per minute. A complete line of belt-driven units is also available.**

## Hand Pumps

The simple, trouble-free principle of operation of the BLACKMER power-operated pumps is used in making BLACKMER HAND PUMPS the best pumps available for economical transferring of liquids from drums, vats or barrels to other containers. Because these pumps deliver a continuous flow they will transfer liquids quicker and with less waste.



## Blackmer Service

More than twenty district sales offices in the leading cities of the United States are maintained for the sole purpose of giving real service both before and after the pumps are sold.

Our bulletin DB 300 gives complete information about our pumps —write for this bulletin or, better still, ask for it at **Booth 219 at the Southern Textile Exposition.**

# BLACKMER PUMP COMPANY

**MAIN OFFICE: GRAND RAPIDS, MICH.** **OFFICES IN PRINCIPAL CITIES**

# *The American Business Paper*

ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

## *Consider these features of well-conducted business papers, and their influence on the development of business technique*

- - - NEWS which, in the business paper, means the presentation of all angles of controversial matters; the rapid dissemination of information about new or improved products; the spread of knowledge concerning shifts in personnel in an industry, so important to all concerned; the exhaustive studies of conditions and trends which show in what directions industry is moving; the co-relation of specific developments in an industry with general movements in business; the technical information which, in any one issue of a competent business paper, might amount to as much as an individual could hope to gather in a lifetime; and over and above all this detailed material is the editorial comment, sifting, comparing, commenting, searching out the basic elements, organizing the mass of news and information into compact, usable generalizations.

**The American Business Paper is one of the evidences of America's willingness to learn. Like its widespread system of democratic education, the Business Paper serves an industry's need for impartial information, placing at each reader's command the same accumulation of data, for such use as he may make of it.**

# *Nature's Own Way*

## of changing starch back to its soluble liquid form

ARCY is nature's own way of liquefying all thick-boiling starches. It should not be confused with malt diastase, pancreas and other enzymes. ARCY is far less sensitive to variations in temperature and to changes in conditions of acidity and alkalinity. ARCY can be relied upon to work satisfactorily under ALL working conditions on ALL grades of the less-costly thick-boiling starches, carrying the conversion to just the right degree for maximum sizing value; completely liquefying the starch to practically a non-congealing, thin size solution with marked penetrating and binding properties. Its application is simple, inexpensive and fool-proof.

NATURE'S own way is always best, and ARCY is nature's way of liquefying every granule of starch into a slow-congealing, transparent, always uniform thin-boiling solution that prevents frosty splotches and glazed streaks on the warps; increases tensile strength; produces a smooth finish yarn; improves weaving conditions; makes excessive humidity unnecessary; and increases the life of cotton harness.

ARCY 4-X is used for liquefying thick-boiling CORN and SAGO starches. ARCY 1-X is used for liquefying POTATO and TAPIOCA starches.

The full story is yours for the asking. Write for it on your letterhead today.

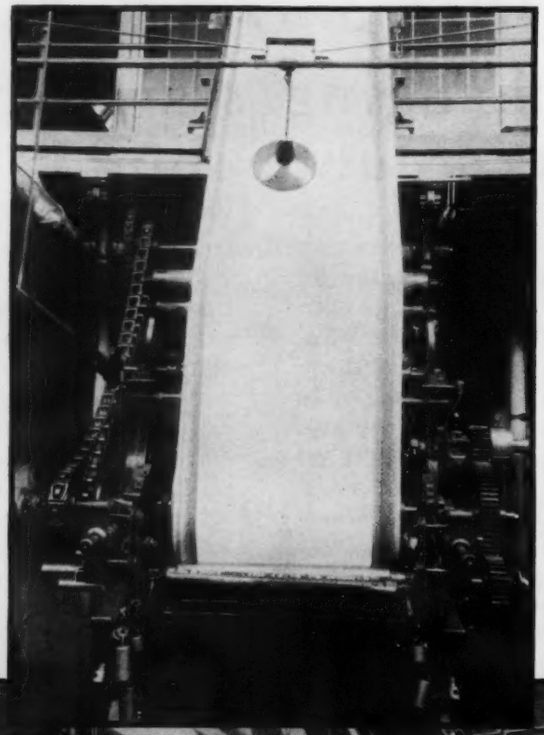
# A R C Y

DRAKE CORPORATION

NORFOLK, VIRGINIA

# *For Fine Printing of Difficult Patterns*
## Depend Upon "U.S." Mackintosh Blankets
### *with* SMOOTH JOINT

"U.S." Mackintosh Blankets which eliminate a seam mark have proven an outstanding success in textile printing. These superior blankets have shown time and time again that they will successfully run fine patterns which are impossible with blankets that make seam marks. Many prominent textile printers have standardized on "U.S." Mackintosh Blankets both because of their rugged construction and their remarkable success with difficult patterns, which the new Smooth Joint has made possible.



The installation illustrated is at the Glenlyon Print Works, which concern operates fifteen printing machines using "U.S." Mackintosh Blanket 20 yards long, 44 to 50 inches wide, six ply; all with *SMOOTH JOINTS.*

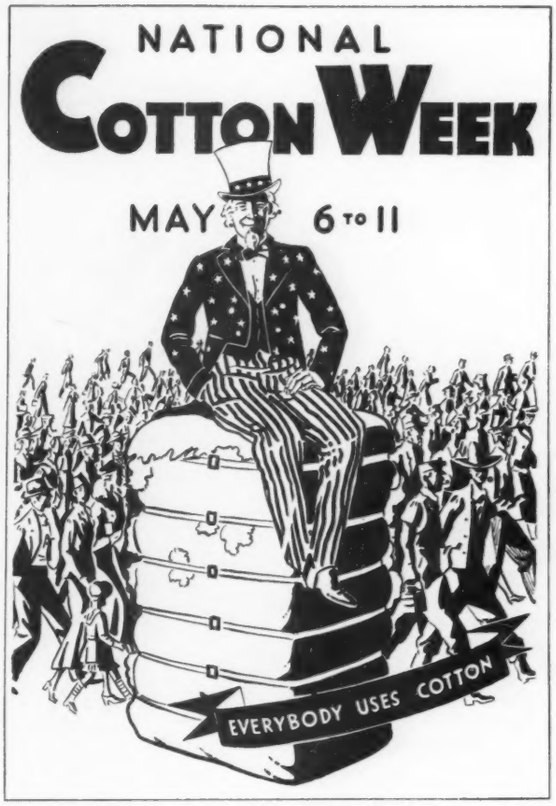
"U.S." engineering and "U.S." workmanship are your assurance of unrivalled quality in all types of mechanical rubber goods for the textile industry. All information at your disposal without obligation.

**United States Rubber Company**

*Mechanical Goods Division* 1790 Broadway, New York, N. Y.

U.S. MACKINTOSH BLANKETS — An Outstanding Value of the United States Rubber Company

*These posters in striking colors and in 12 x 18" size available without charge from The Cotton Textile Institute.*




# 1935
# IS A COTTON YEAR

●

*"National Cotton Week has certainly become a national institution and I can assure you that we shall be a part of it as long as it is in effect."*

*"Please be assured of our heartiest cooperation in National Cotton Week. The results we obtained last year were the best we ever had."*

*"We are enthusiastic backers of the Cotton Week promotional idea. We went into it wholeheartedly last year and enjoyed an excellent sales volume as a result."*

**Those are just three of the many assurances which have come to The Cotton-Textile Institute from merchants who are planning intensive promotions for National Cotton Week, May, 6-11.**

**With merchants so enthusiastic -- and manufacturers cooperating in furnishing fast selling cotton merchandise and new ideas in cottons -- the way is paved for the most successful of all National Cotton Weeks.**

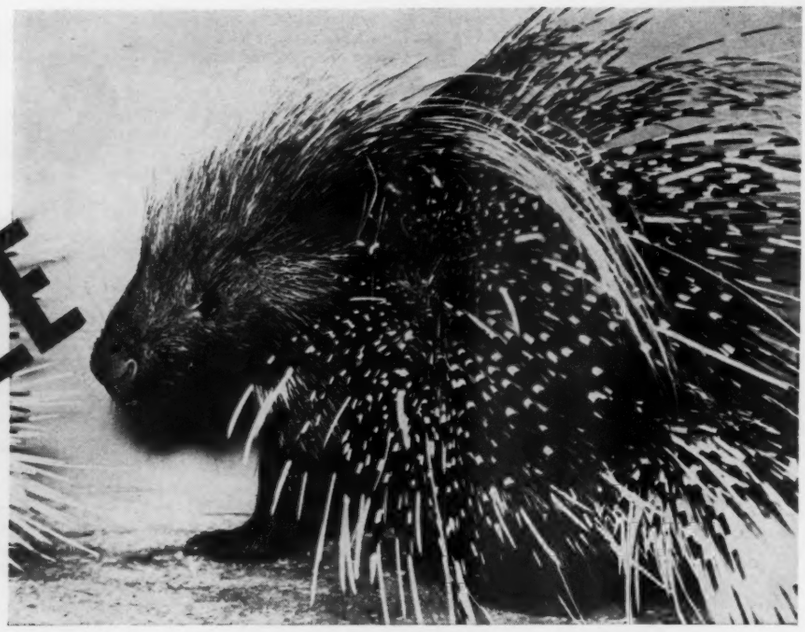
**The more cottons the merchants sell -- the more cottons the cotton spinners, weavers, converters, and manufacturers of finished products sell -- so everyone has a direct interest in National Cotton Week.**

**Remember -- May 6 to 11 is just the start of the Summer selling season, when cottons are in peak demand.**

*National Cotton Week Merchandising, Advertising and Display Bulletins* -- for every department in the store--are available from The Cotton-Textile Institute without charge -- upon request.

## The COTTON-TEXTILE INSTITUTE, Inc.

**320 Broadway, New York, N. Y.**



# FOR SALE

# THIS FINE ANGORA CAT

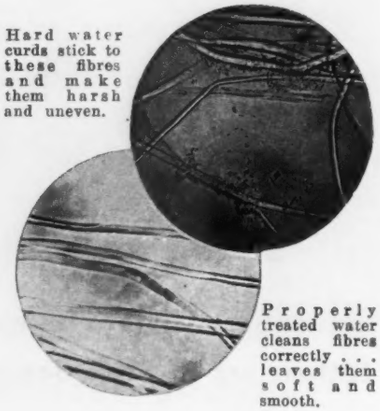
• You'd never fool anyone . . . advertising a stiff-quilled porcupine as a soft-coated household pet. And it's pretty difficult to convince a textile buyer that fabrics have a soft, smooth quality if hard water processing has given them that unmistakable harsh feel.

Even natural soft water will not prevent such harshness. Practically all water supplies contain dissolved compounds of calcium and magnesium, which form sticky curds in the soap suds during washing and rinsing. These curds are insoluble, and they adhere to the tiny fibres of cotton, silk, and wool . . . in processing, these fibres become stiff and uneven (see photomicrographs at the right). This harshness is noticeable in the finished goods, and spoils their quality.

Has your mill water been tested recently? Most water supplies vary in composition from day to day and from season to season. Our researches show that practically all natural mill waters must be properly conditioned; they may need to be coagulated, filtered, softened or perhaps even further treated to enable finished goods of high quality to be produced.

More than 1,000 mills use Permutit Water Treating Equipment. They make these savings: fewer reruns and rejections; less soap, soda and bleach; reduced boiler tube repairs and replacements; and less yarn breakage. Also, the finished goods are soft and smooth and have a more even, full-bodied color. Many of these mills have paid for their water treating equipment in savings within two years . . . some in one year's time.

Let us make a free survey of your mill and recommend proper water treatment. First, write for our booklet, "Reducing Textile Costs and Troubles" . . . an up-to-date study of water treatment. Write The Permutit Company, 330 West 42nd Street, New York City.



Hard water curds stick to these fibres and make them harsh and uneven.

Properly treated water cleans fibres correctly . . . leaves them soft and smooth.

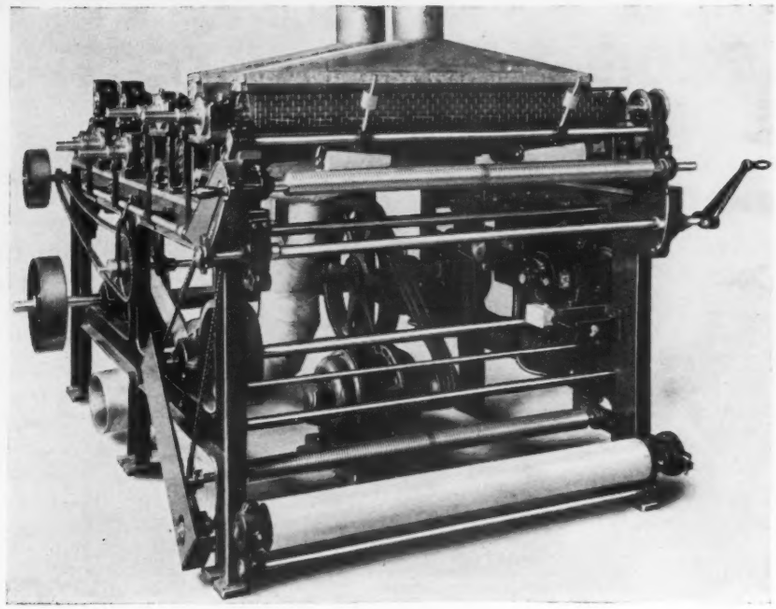
**ASK ABOUT THE NEW ZEOLITE**

Super-Zeo-Dur has been perfected after years of testing. It saves you salt, and at the same time provides an extra reserve capacity. Write for full information about the economies you can effect by refilling your present equipment.

Permutit

*Water Treating Equipment*

# Constantly on Guard!



WE announce a new Automatic Type C Shear for removing selvage and surface threads. It has the finest automatic device that has been developed. In its action there is no fixed cycle that must be completed before it can act again. It is constantly on guard!

Regardless of where they come, the detecting mechanism gives full width protection on every single seam, bunch or slub. Also, any foreign substance which might damage the cutters instantly operates the automatic. It is constantly on guard!

A flat butted seam is protected just as well as a common seam. Our detecting mechanisms have been handling them in many mills—and these automatics are constantly on guard!

Our Automatic Type C Shear is brand new yet backed by experience. The floor space required has been reduced considerably. The Shear is much simpler yet complete. It is compact yet really accessible. And, the automatic protector is constantly on guard!

Reduced cloth room costs and better output are brought about by our new automatic Shear. There is a tremendous saving over hand trimming. Inspecting costs are greatly reduced.

Adaptable to conditions, our new Type C Shear can be arranged to run with a Brushing Machine or with a brushing attachment. For long runs, we arrange a Sewing Machine and Scray. Built in all common widths. And—the automatic protector is constantly on guard!

**It is the Right Answer to Your Cloth Room Problem**

**See it at the Southern Textile Show—Spaces 237-239**

**CURTIS & MARBLE MACHINE CO.**

**WORCESTER, MASS.**

**Branch offices: New York Philadelphia Greenville, S. C.**

# *Standing Evidence*

## OF THE POPULARITY OF STEWART FENCE AS A PROTECTION TO MILLS!

Stewart Fence is relied upon to protect mills throughout America against thoughtless and malicious trespassing with its accompanying damage to property and equipment.

There are a number of exclusive structural features for which Stewart Fence has become widely known. It will pay you to see actual samples of Stewart construction before you make a decision.

While at the Southern Textile Exposition in Greenville, don't fail to see the permanent Stewart installation directly across the street from Textile Hall. For further information, write for the address of your local Stewart Sales and Erection Office.

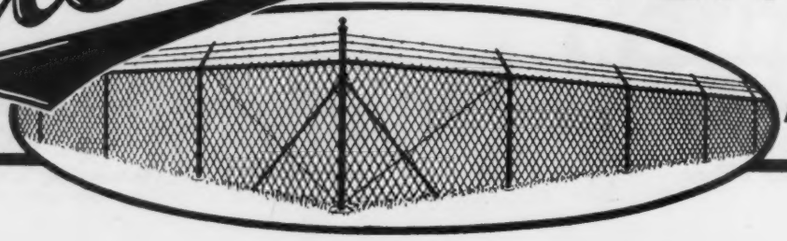
*ABOVE . . .*
*Stewart Installation protecting the Springs' Cotton Mill, Eureka Plant, Chester, S. C., (More than 2500 lineal feet installed.)*

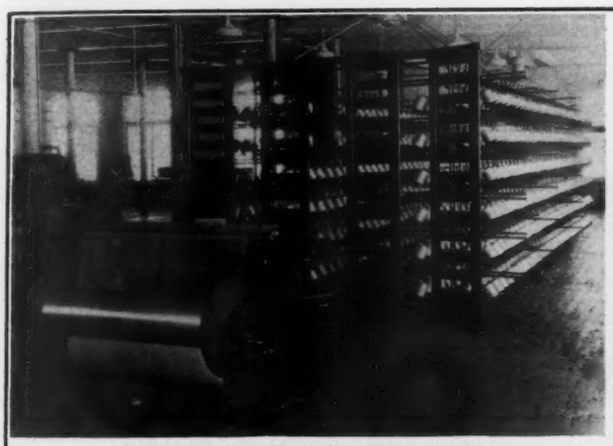
*RIGHT . . .*
*Typical Stewart Non-Climbable Fence installed at Greenwood Cotton Mills, Greenwood, S. C., (Several thousand lineal feet installed).*

*LEFT . . .*
*Stewart Non-Climbable Fence solves the protection problem along exposed areas of the Neisler Mills, Inc., Kings Mountain, N. C., (Nearly 5,000 lineal feet installed.)*

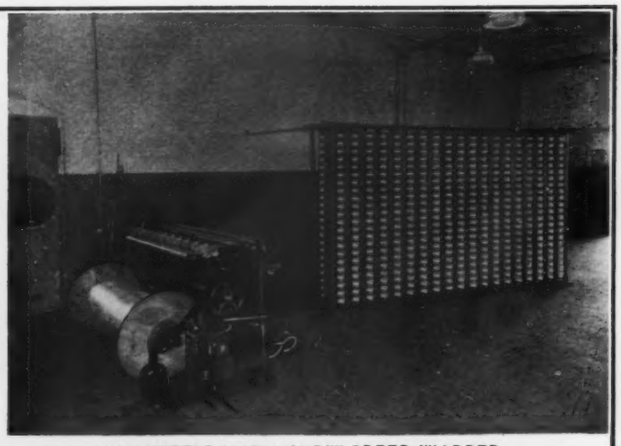
The STEWART IRON WORKS., Inc.
106 Stewart Block, Cincinnati, Ohio

Stewart IRON and WIRE FENCES *for all purposes*

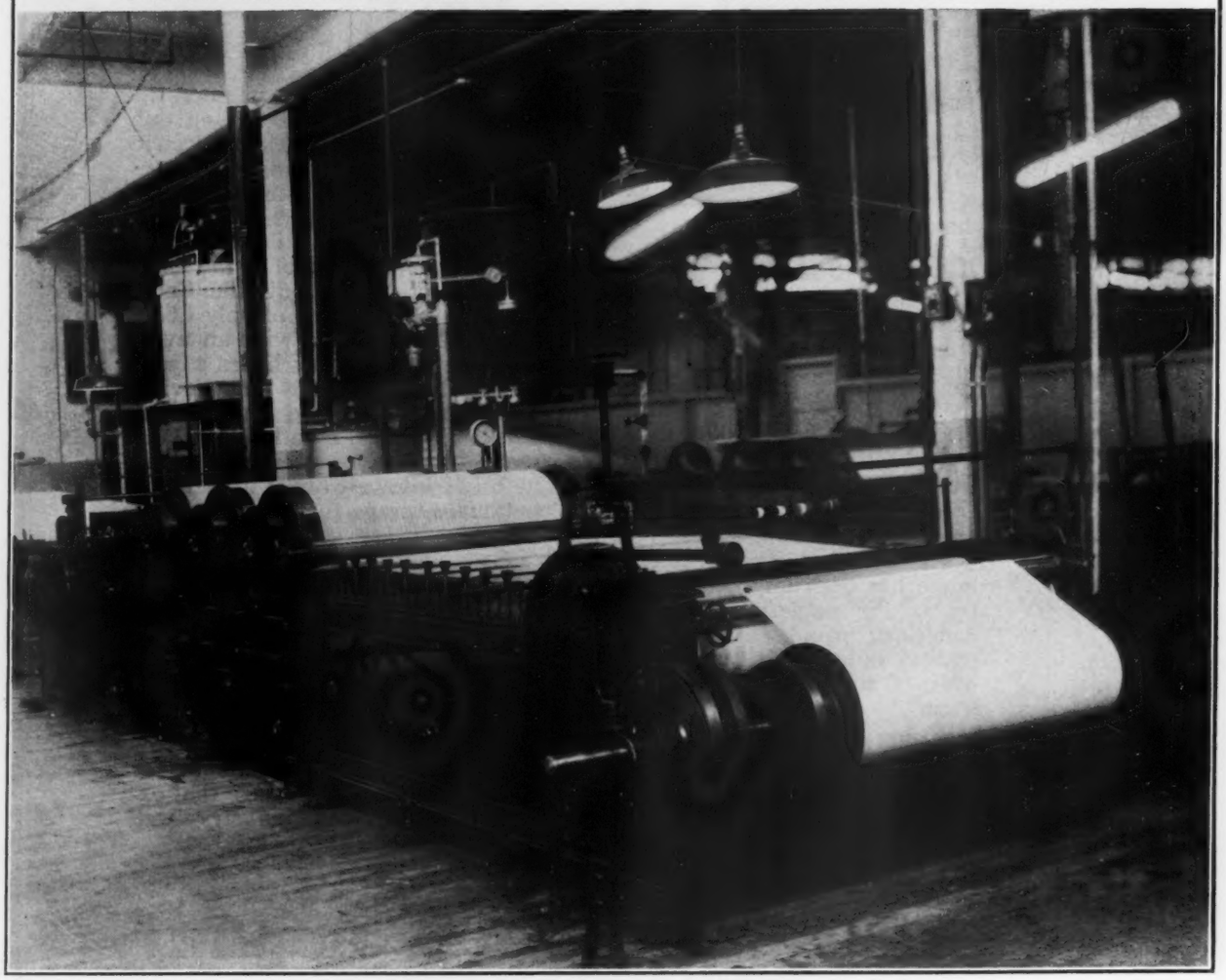




SYNTHETIC YARN HIGH SPEED WARPER



SYNTHETIC YARN SLOW SPEED WARPER



WARP SIZING MACHINE FOR SYNTHETIC YARNS

Complete Units for making and sizing synthetic yarn warps on cotton and silk system Systems.
Write or wire us for details of description, production, quotations, etc.

## COCKER MACHINE & FOUNDRY COMPANY

**GASTONIA, NORTH CAROLINA**

*Northern & Canadian Representative*

J. S. Fallow & Company, New Bedford, Mass.

*BUILDERS OF ALL TYPES OF EQUIPMENT FOR THE MAKING AND HANDLING OF WARPS*

# Industry thrives best where people live best

Successful industrial operations no longer depend solely on closeness to raw materials, although Georgia has these in abundance. It doesn't rely on cheap transportation, although Georgia offers quick access to American markets by air, water and land. Cheap, abundant electric power; an intelligent supply of labor—these, too, are outstanding industrial possessions of the state of Georgia, yet not the most alluring of all, perhaps.

There's a deep significance in THE WAY GEORGIA PEOPLE LIVE, the manner in which they avail themselves of the better things of life.

The use of electric service in the home has been quite justifiably set up as the modern index of how American people live—an indication of how wisely they make the most of the opportunities of existence.

In 1934, customers of this Company stood *first* among all companies east of the Rocky Mountains in the amount of residential electricity used per customer.

Residential electric customers in 70 of the cities and towns on our lines have built their use of electric service up to an average of more than 1,000 kilowatt hours a home a year. Exactly half of these 70 towns employ at least 1,200 kilowatt hours a year a home to smooth the daily paths of existence. Louisville, Georgia, with a population of only 1,650, leads the procession with an average of 1,700 kilowatt hours a year for each home using our service. These figures, (based on October, 1934, as a typical month) are all the more impressive when contrasted with 631 kilowatt hours a year, the national average for 1934. And this enthusiastic use goes on. For the twelve months ending February, 1935, the total use for homes throughout our system—426 towns in all—was 919.3 kilowatt hours, an increase of 14.2 per cent over the twelve months ending one year earlier.

This record—added to all Georgia's other known advantages for industry—creates a picture that expanding American industry well can take to heart.

# Georgia Power Company

# REDUCING TIME-WASTE in Preparing Perfect Non-Congealing Starch Mixtures

THE question of time is an important consideration in preparing size mixtures. The use of STALEY'S Textile "S" STARCH will help you save many valuable hours cooking time, as well as much steam and labor. It requires only 20 minutes' cooking time to prepare a perfect size mixture from this improved starch.

Then, too, with Textile "S" you will save time and labor wasted in cooking when you start up in the morning or after week-ends. It is non-congealing and will hold its viscosity and other qualities for many hours. There is also the time saved by the elimination of cleaning clogged pipes.

STALEY'S Textile "S" Starch is clean and free from impurities. One bag is the same uniform quality as the next, month after month and year after year. This is assured by accurate control at our laboratories. You will always secure the same uniform results,—thorough penetration, perfect adhesive qualities to insure non-shedding,—in short a continued unvarying size mixture that will maintain smooth, flexible strong warps that weave better.

Our laboratories are always ready to render you, without obligation, any help you may desire towards saving time, labor and expense in your size problems. Consult with our representatives at SOUTHERN TEXTILE EXPOSITION BOOTH 415.

STALEY SALES CORP.
DECATUR, ILLINOIS

New York City
Boston
Philadelphia
San Francisco
Dallas
Chicago
Atlanta
Spartanburg

## Staley's Textile "S" Starch

*The Staley Administration Building*

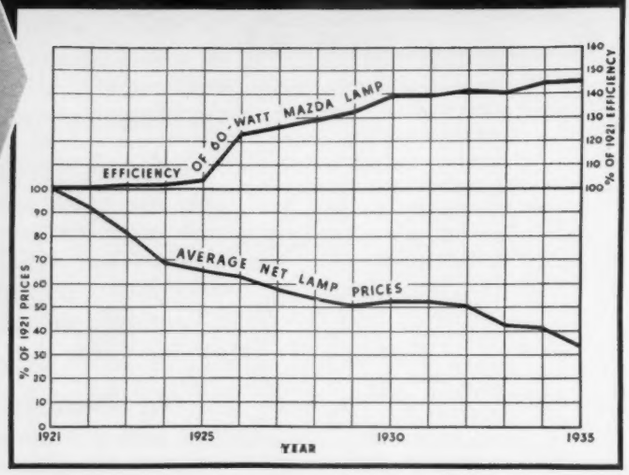
**NOW... with General Electric price reduction on genuine MAZDA lamps**

*You can*

**SAVE MONEY...**

**ENJOY BETTER LIGHTING**

*in your plant...factory...office*



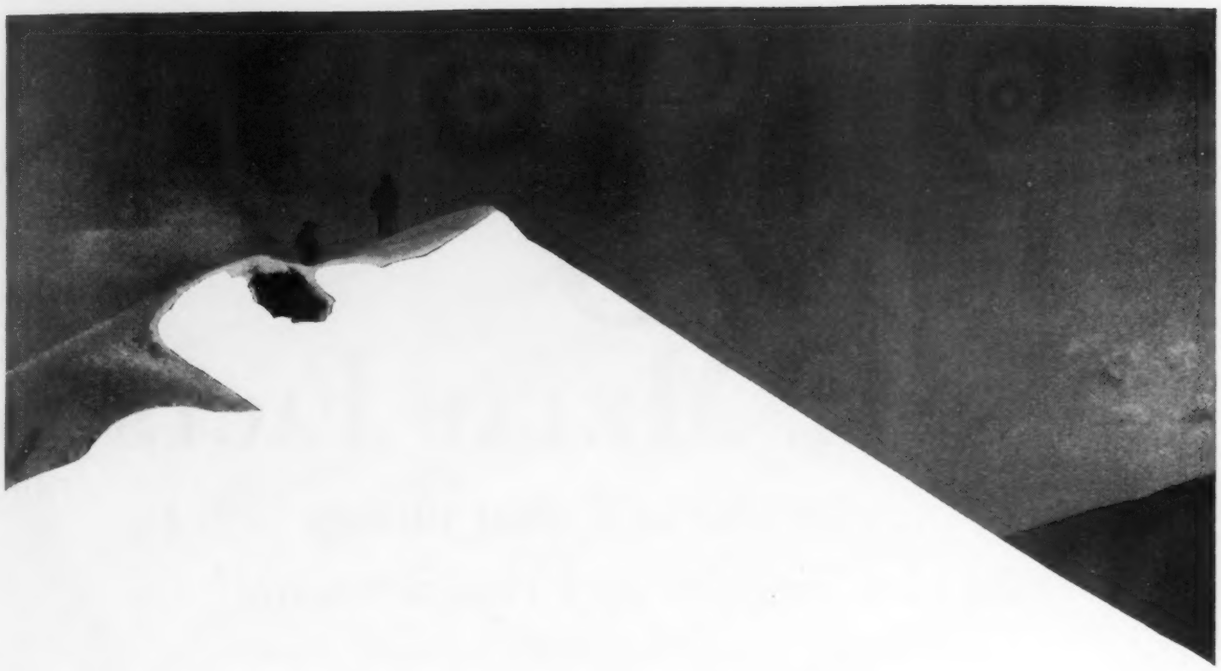

Here you see graphically how the price of MAZDA lamps has gone steadily down while lamp efficiency—the amount of light produced per unit of current—has gone up and up.

GENERAL ELECTRIC'S announcement of substantial price reductions in the most popular types of MAZDA lamps (effective April 1st) now makes it possible for every plant, factory and office to secure the advantages of better light.

In every way, these price reductions offer you great advantages toward bringing lighting standards up to the minimum requirements for efficient, safe seeing. They make your lighting costs lower than ever.

Phone or write the jobber who serves you with MAZDA lamps of General Electric manufacture today and order an ample supply of the higher wattage MAZDA lamps at these new, low prices. General Electric Company, Nela Park, Cleveland, Ohio.

**GENERAL ELECTRIC**



# WHITE

## *as new fallen snow*

## —DULUX STAYS WHITER

A pure white that challenges the whiteness of fresh new snow—DULUX MILL WHITE. A whiter, smoother interior finish that stays cleaner. As easily washed as tile. Easy to apply. Quick drying. Does not yellow. Dulux erases dark, dangerous shadows, speeds up production, assures uniform quality of goods.

Send coupon now for an interesting story on how to keep your plant clean and white—and reduce maintenance costs.

*New*

DUPONT REG. U. S. PAT. OFF. **DULUX** REG. U. S. PAT. OFF.

**MILL WHITE**

E. I. du Pont de Nemours & Co., Inc.
Finishes Division, Wilmington, Del.
Please send your booklet, "DULUX Mill White."

*Name* .....

*Company* .....

*Street* .....

*City* ..... *State* .....

# 3
# MONEL METAL FACTS

## ...for the mill that makes its own repairs and replacements!

Most textile men know that Monel Metal is the standard corrosion-resistant material for dye-house equipment, that it can't rust, and outwears and out-saves other materials that are considered for this service. What is sometimes *not* understood is that Monel Metal is easy to fabricate, and that supplies are easily and quickly obtainable:

**1** ***Monel Metal is carried in stock***—at convenient delivery points in all the commonly used mill forms: sheets, rods, tubing, welding wire, and such accessories as screws, nuts, bolts, washers and rivets. Monel Metal castings are available from well equipped foundries. (Items not in stock are available with but little delay from mill shipment.)

**2** ***Latest information about working Monel Metal*** is readily available in the form of printed instructions and bulletins. They are clearly written and well illustrated, and show how Monel Metal is machined, formed, polished, coiled, soldered, brazed and welded electrically or by gas. Welded Monel Metal equipment does not require annealing to insure its corrosion resistance.

**3** ***Monel Metal stocks are carried by*** the following suppliers who also handle rolled Nickel and Nickel-Clad Steel:

*Atlanta*
J. M. TULL METAL & SUPPLY CO.
285 Marietta Street

*Boston*
WHITEHEAD METAL PRODUCTS CO. OF NEW YORK, INC.
235 Bridge Street, Cambridge, Mass.

*Buffalo*
WHITEHEAD METAL PRODUCTS CO. OF NEW YORK, INC.
319 Niagara Street

*Chicago*
STEEL SALES CORPORATION
129 South Jefferson Street

*Cincinnati*
WILLIAMS AND COMPANY, INC.
2118 Spring Grove Avenue

*Cleveland*
WILLIAMS AND COMPANY, INC.
1748-56 East 22nd Street

*Denver*
HENDRIE & BOLTHOFF MFG. & SUPPLY CO.
1621-39 Seventeenth Street

*Detroit*
STEEL SALES CORPORATION
4150 St. James Street

*Kansas City*
STEEL SALES CORPORATION
606 West 59th Terrace

*Los Angeles*
PACIFIC METALS COMPANY, LTD.
1400 South Alameda Street

*Milwaukee*
STEEL SALES CORPORATION
647 West Virginia Street

*Minneapolis*
STEEL SALES CORPORATION
529 South 7th Street

*Newark*
WHITEHEAD METAL PRODUCTS CO. OF NEW YORK, INC.
215 Frelinghuysen Avenue

*New Orleans*
EQUITABLE EQUIPMENT CO., INC.
410 Camp Street

*New York*
WHITEHEAD METAL PRODUCTS CO. OF NEW YORK, INC.
304 Hudson Street
*Bronx Office:* 1334 Webster Avenue, Bronx

*Philadelphia*
WHITEHEAD METAL PRODUCTS CO. OF NEW YORK, INC.
725 Arch Street

*Pittsburgh*
WILLIAMS AND COMPANY, INC.
901 Pennsylvania Avenue

*St. Louis*
STEEL SALES CORPORATION
4903 Delmar Boulevard

*San Francisco*
PACIFIC METALS COMPANY, LTD.
3100 19th Street

*Seattle*
EAGLE METALS COMPANY
21 Spokane Street

*Montreal*
ROBERT W. BARTRAM, LTD.
277 Duke Street

*Toronto*
PECKOVER'S LIMITED
77 Front Street, E.

*Vancouver, B. C.*
WILKINSON COMPANY, LTD.
190 Second Avenue, West

• • •

MONEL METAL

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

NRA CODE

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

*You are invited to inspect the amazing new*

**FAIRBANKS DORMANT MECHANICAL RECORDING SCALE** *and*

many other famous Fairbanks Scales
at the Fairbanks-Morse exhibit

**BOOTH 479**

**SOUTHERN TEXTILE EXPOSITION**

A Fairbanks Dormant Mechanical Recording Scale will be on the job at the Southern Textile Exposition in Greenville. Don't fail to see it in operation.

● See the newest in scales for textile service—the Fairbanks scale that automatically prints its own weight records! No matter what weight is placed on the platform, it is weighed accurately with true Fairbanks precision—and the figures printed automatically by the special Fairbanks recording mechanism.

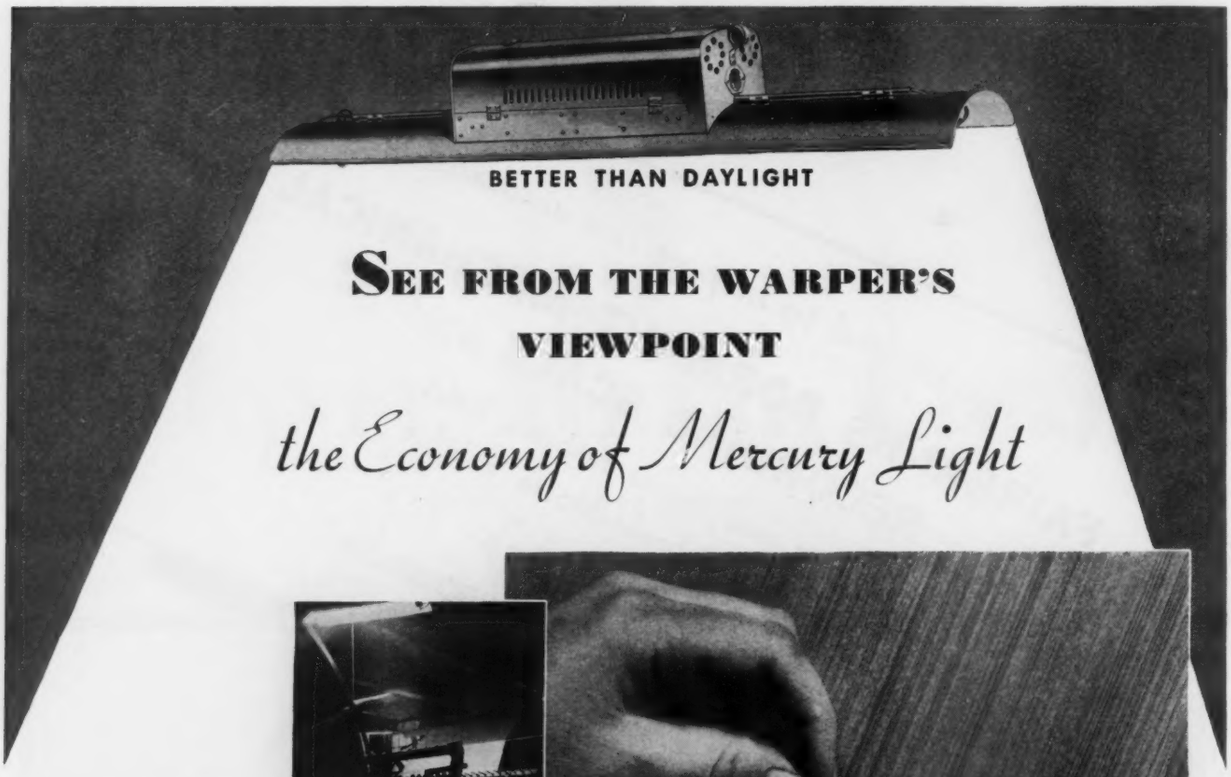
On display at Booth 479 you will also find both old friends and new in Fairbanks Scales—cotton lap scales, parcel post, roving, bench dials, portable platform scales, trip and dye room scales. Come in and get acquainted with these fine safeguards that prevent loss of raw materials, errors in manufacture and shipping.

For complete information on any weighing requirement, just ask any of our men at the booth. They know textile problems. Or, if you can't get to Greenville, simply write Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill. And 40 principal cities—a service station at each house.

# Fairbanks Scales

PREFERRED THE WORLD OVER

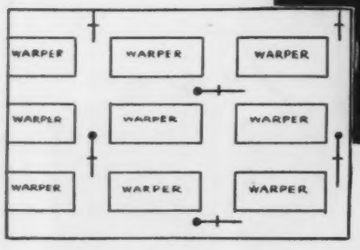
6323-SA70.12



BETTER THAN DAYLIGHT

# SEE FROM THE WARPER'S VIEWPOINT

*the Economy of Mercury Light*




SYMBOL —

COOPER-HEWITT MERCURY VAPOR LAMP

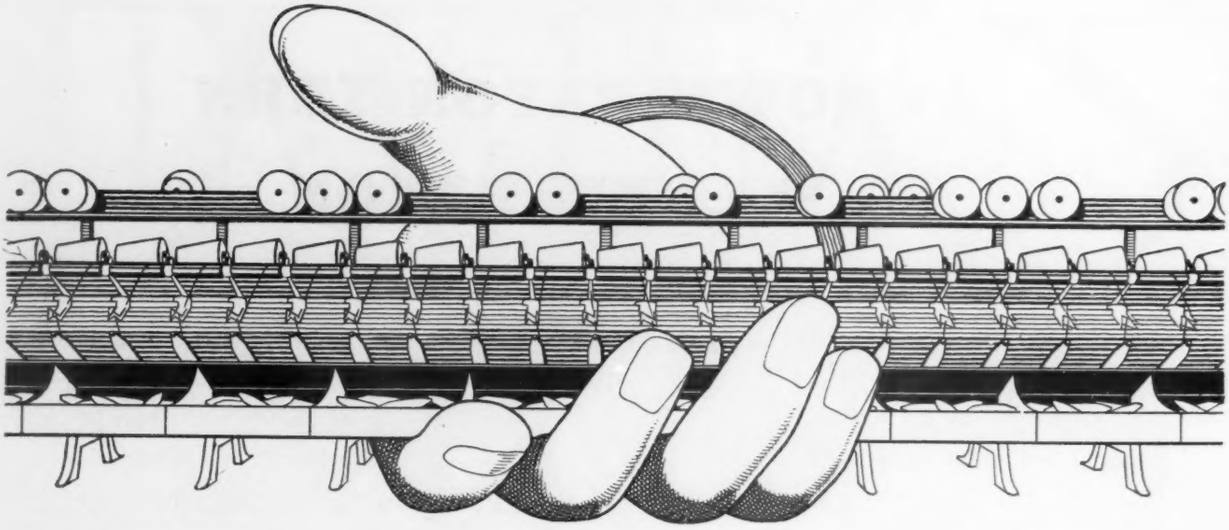
Take the place of a workman under Cooper-Hewitt Light! Then you will know what he means by seeing detail quickly. Work in his place throughout the shift without eye strain or fatigue and you realize why rejects are few and far between; *why accidents are almost nil;* why the finest workmen are attracted to mills lighted by this nearest approach to a continuous noon daylight from the north.

Day or night under "better than daylight" saves time, reduces spoilage and reduces labor turnover. That is why more than half of the larger silk mills are lighted by Cooper-Hewitt Mercury Vapor Light. It has proven a most profitable production tool.

Be skeptical! Ask for a trial installation where your most difficult operations take place. We welcome the opportunity of showing you how Cooper-Hewitts can increase profits by means of their detail revealing light . . . General Electric Vapor Lamp Co., 853 Adams Street, Hoboken, New Jersey.

**GENERAL ELECTRIC VAPOR LAMP COMPANY**

626 Copr. 1934, General Electric Vapor Lamp Co.



# YOU COULDN'T GET AS MUCH
## —even if you Paid More

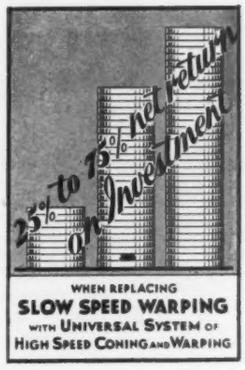
AS profitable as it is, there is a limit to the results you can expect from a change-over to high speed warping. In three out of four mills, that limit of maximum return is reached ***by the Universal System of High-Speed Coning and Warping***—on an investment which is actually the lowest you can make for a high speed system.

***One Mill Saved $4,200 a Year***

An investment of $9,700 has brought one mill which installed the Universal System an annual net return of 43%. Maintenance is averaging less than $50 a year. This is due largely to its simple construction and the rotary traverse which eliminates reciprocating guides.

***Others Report Maintenance Under $100***

The following figures show that in nearly every mill equipped with the Universal System, maintenance is running less than $100 a year. In fact, one mill operating two shifts throughout 1934 did not have to buy any parts and so had no maintenance at all on an investment of $12,000. Other mills report:


25% to 75% net return on investment
WHEN REPLACING
SLOW SPEED WARPING
WITH UNIVERSAL SYSTEM OF
HIGH SPEED CONING AND WARPING

| *Investment* | *Maintenance* | *Per Cent* |
|---|---|---|
| $19,700 | $ 40.05 | 0.20% |
| 23,400 | 18.10 | 0.08 |
| 14,500 | 39.60 | 0.27 |
| 19,200 | 119.42 | 0.62 |
| 5,800 | 20.68 | 0.36 |
| 12,700 | 59.02 | 0.47 |
| 8,200 | 33.43 | 0.41 |
| 7,600 | 28.45 | 0.37 |

***In 3 out of 4, More Net Return***

Depreciation cost, throughout the life of the machines, is less than with any other system. This, together with lower maintenance cost and weave room savings, makes the Universal System the best investment for 3 out of every 4 mills.

It costs nothing — entails no obligation — to find out, definitely, how ***your*** mill stands. A letter to Dept. A, Boston, or the branch office nearest you, will bring an estimate of savings and investment for your mill.

IN 3 OUT OF 4 MILLS MORE NET RETURN

*Universal System of High Speed Coning and Warping*

**UNIVERSAL WINDING COMPANY**

BOSTON

NEW YORK · PHILADELPHIA · PROVIDENCE · SPRINGFIELD · UTICA · CHARLOTTE · ATLANTA

1786

# CROWN RAYON YARN

## the NEW RAYON

## LEADS...in Quality...Availability...Variety

**AVAILABILITY** The Viscose Company, World's Largest Producer of Rayon, has five plants in three States, all easily, quickly accessible to the Nation's Textile Centers — in New England, in the Central States, the Middle West, in the South. They produce, continuously, sufficient Crown Rayon Yarn to supply the country's largest knitters and weavers.

**VARIETY** Crown Rayon Yarn is the NEW Rayon of Fashion because in its wide range of deniers, filaments and lusters it offers the weavers the solution to the problem of producing the wanted fabrics well in advance of the market's demands.

**UNIFORM QUALITY** Long experience as the World's Largest Producer of Rayon has made it possible for The Viscose Company to establish, through temperature regulation and mechanical means, constant control in all processes of manufacture.

### Plants of The Viscose Company

Marcus Hook, Pa. Parkersburg, W. Va. Roanoke, Va.
Lewistown, Pa. Meadville, Pa.

### Sales Offices of The Viscose Company

New York City Providence, R. I. Charlotte, N. C.
Philadelphia, Pa. Chicago, Ill.

**CROWN RAYON,** the NEW Rayon of Fashion, Product of The Viscose Co., World's Largest Producer of Rayon, 200 Madison Ave., N. Y. C. We comply with the NRA.

# RAPIDASE

THE ENZYMATIC

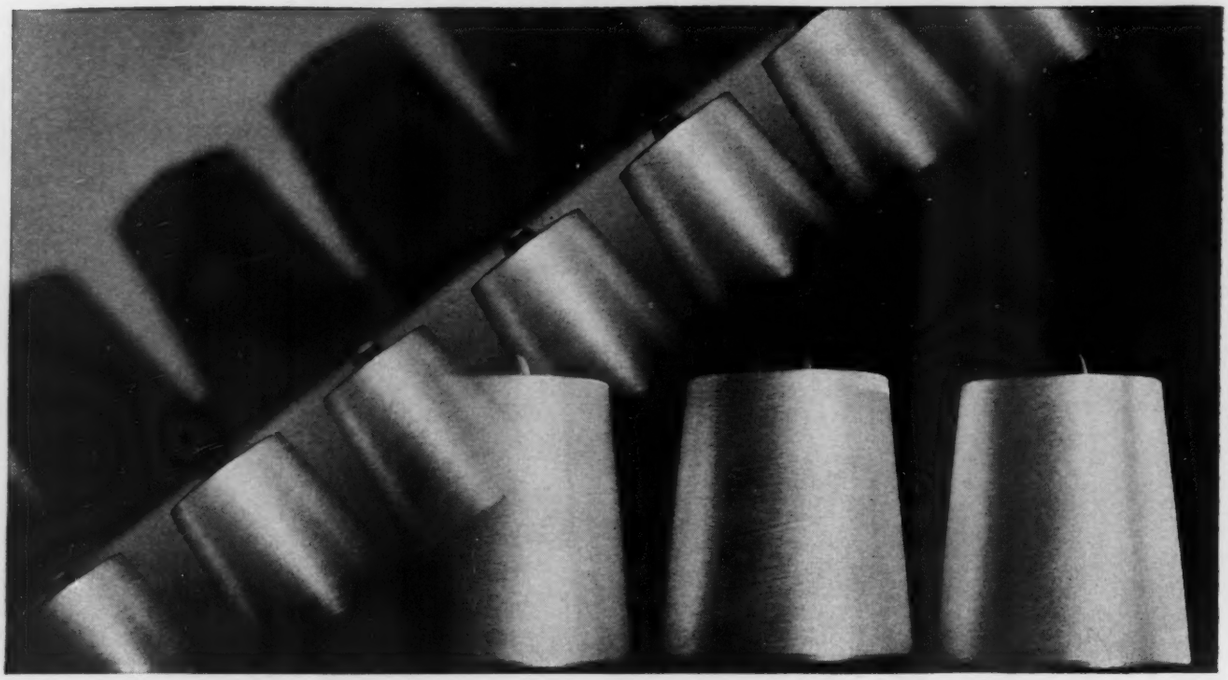
*All-purpose*

DE-SIZING AGENT!

## WALLERSTEIN CO.

INCORPORATED

171 MADISON AVENUE NEW YORK CITY



**BEMBERG** QUALITY CAN NOT BE DUPLICATED. BEMBERG IS AVAILABLE IN REGULAR LUSTER, IN MATESA DULL LUSTER, AND IN SUPERFINE FILAMENT YARNS, THE FINEST FILAMENT YARNS EVER OFFERED COMMERCIALLY . . . IT IS THE UNIQUE CUPRAMMONIUM "STRETCH-SPINNING" PROCESS THAT GIVES TO BEMBERG UNEQUALLED FINENESS, SOFTNESS, STRENGTH, ELASTICITY AND QUALITY.

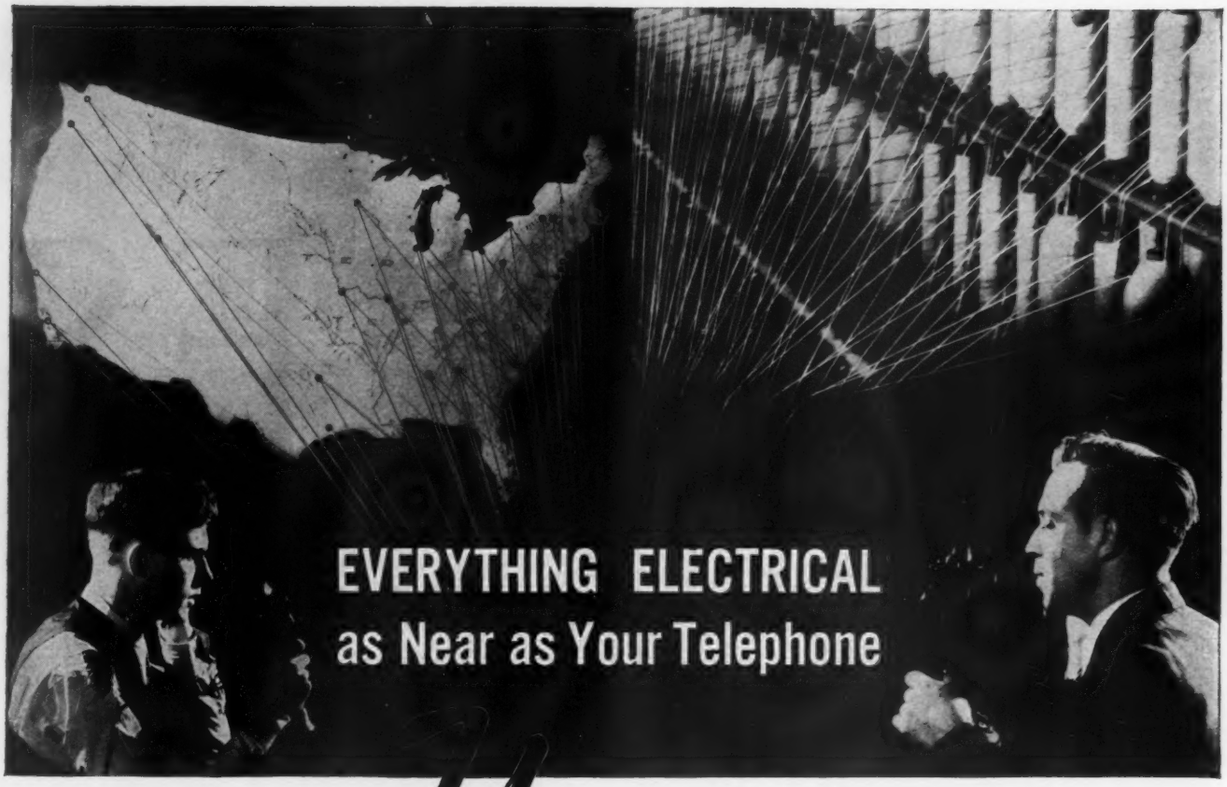
*Visit Bemberg Display, Southern Textile Exhibition, Sections 416 and 417 See Canton Crepes . . . See Triple Sheers . . . See Chiffons . . . See Yarn-Dyed Taffetas . . . See Novelties . . . See Women's Seamless and Full Fashioned Stockings; Men's Fancy and Plain Socks.*

OFFICE:
261 Fifth Avenue, New York

**AMERICAN BEMBERG CORPORATION**

PLANT:
Elizabethton, Tennessee

"Bemberg" is the registered trade-mark of yarns made by the American Bemberg Corporation




YOU will get the benefits of reduced operating costs, low maintenance, dependable operation, and efficient repair and replacement service by selecting General Electric equipment for the electrical requirements of your mill. A textile specialist in the nearest G-E office is ready to help you choose the right equipment to meet your particular requirements efficiently and economically. Why not call him? General Electric, Schenectady, N.Y.

**G-E OFFICES IN**

ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
CHARLOTTE
CHATTANOOGA
CHICAGO
CLEVELAND
DALLAS
DETROIT
INDIANAPOLIS
KNOXVILLE
LOS ANGELES
MILWAUKEE
NASHVILLE
NEW YORK
PHILADELPHIA
PORTLAND, ORE.
PROVIDENCE
RICHMOND
SCHENECTADY
SYRACUSE
UTICA

. . . and in 54 other cities throughout the U. S.

## G-E Products for the Textile Industry

**Motors and Control** for every process in the manufacture of textiles

**Turbines,** motor-generators, and auxiliary equipment for power plants

**Transformers,** voltage regulators, and other equipment for power distribution

**Capacitors,** synchronous motors, and synchronous condensers for power-factor correction

**Cable,** wire, and wiring devices for all wiring installations

**Lighting Equipment**

**Welding Sets** for plant maintenance

011-62

# GENERAL ELECTRIC

*Labels*
ALL KINDS

*Tickets*
AS USED ON BLANKETS

*Hang Tags & Bolt Ends*

*Stickers*
FOR IDENTIFICATION AND CONSTRUCTION SPECIFICATIONS

*Riders*

*Box Tops*
FOR HOSIERY

*Bands*
FOR ALL BOLT GOODS HOSIERY OR SHIRTS

*These are*

# SALES BUILDERS

*For* SOUTHERN TEXTILES

***NEW DESIGNS · REPRODUCTIONS***

# JACOBS GRAPHIC ARTS COMPANY

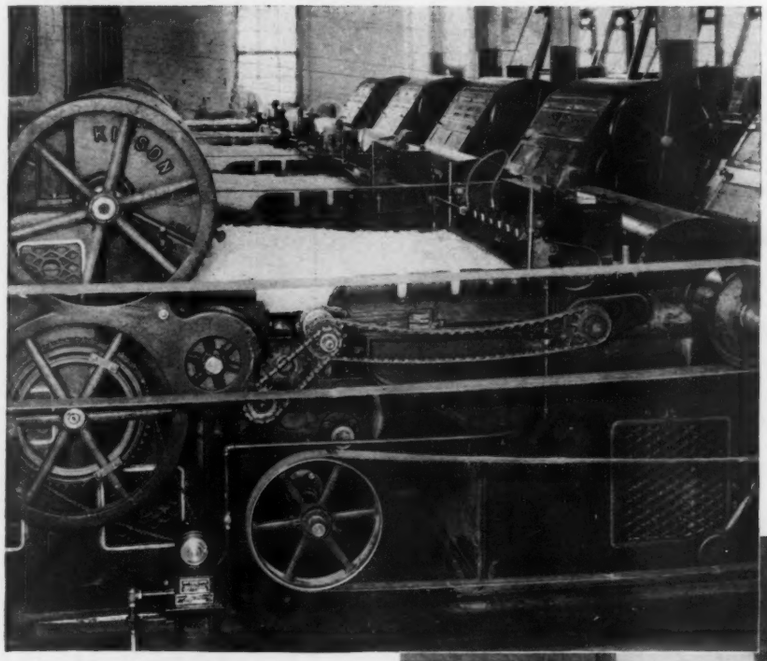
CLINTON · S.C.

# ADD TO COTTON ● what NATURE LEFT OUT!

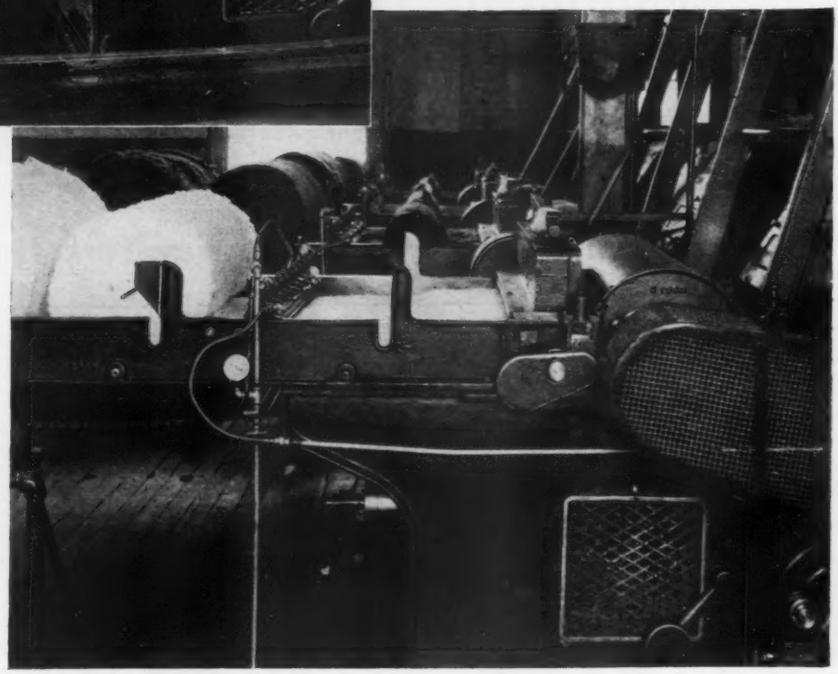
## ● Needful Lubrication...

BY THE

BRETON MINEROL PROCESS PATENTED



MINEROL CONDITIONING of cotton fibres aids normal moisture during manufacturing operations. It makes the fibre more supple...neutralizes static . . . prevents kinking. It lubricates, softens and proves notably helpful in Carding, Drawing and Spinning.



MINEROL treatments assure better sanitary conditions in the mill . . . reducing dust and "fly"... lessening fire hazard. They bring invisible losses to a minimum and actually increase yarn production.

The BRETON MINEROL PROCESS prepares desirable reactions to the processes of Dyeing, Bleaching and Mercerizing.

VISIT OUR EXHIBIT
SECTION 464 ● ANNEX
Southern Textile Exposition

## BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK

# The VANDERBILT Hotel

New York City

## Visitors

*always enjoy its Atmosphere of Friendliness and Charm and its Air of Distinction as well as its Excellent Cooking and Exceptional Service . . . . Its Convenient Location, its Nearness to Railway Terminals, Shopping District, Theatres, make it the*

**"Handiest" Stopping-place in New York**

*To these Attractions add*

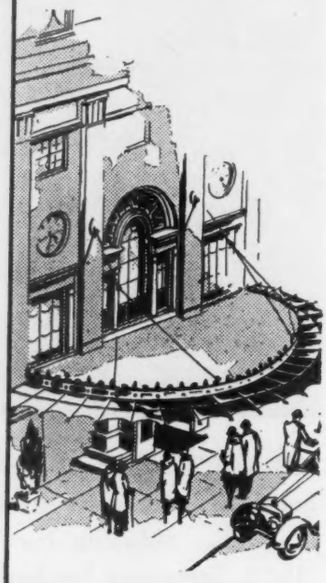
**REMARKABLY LOW RATES**

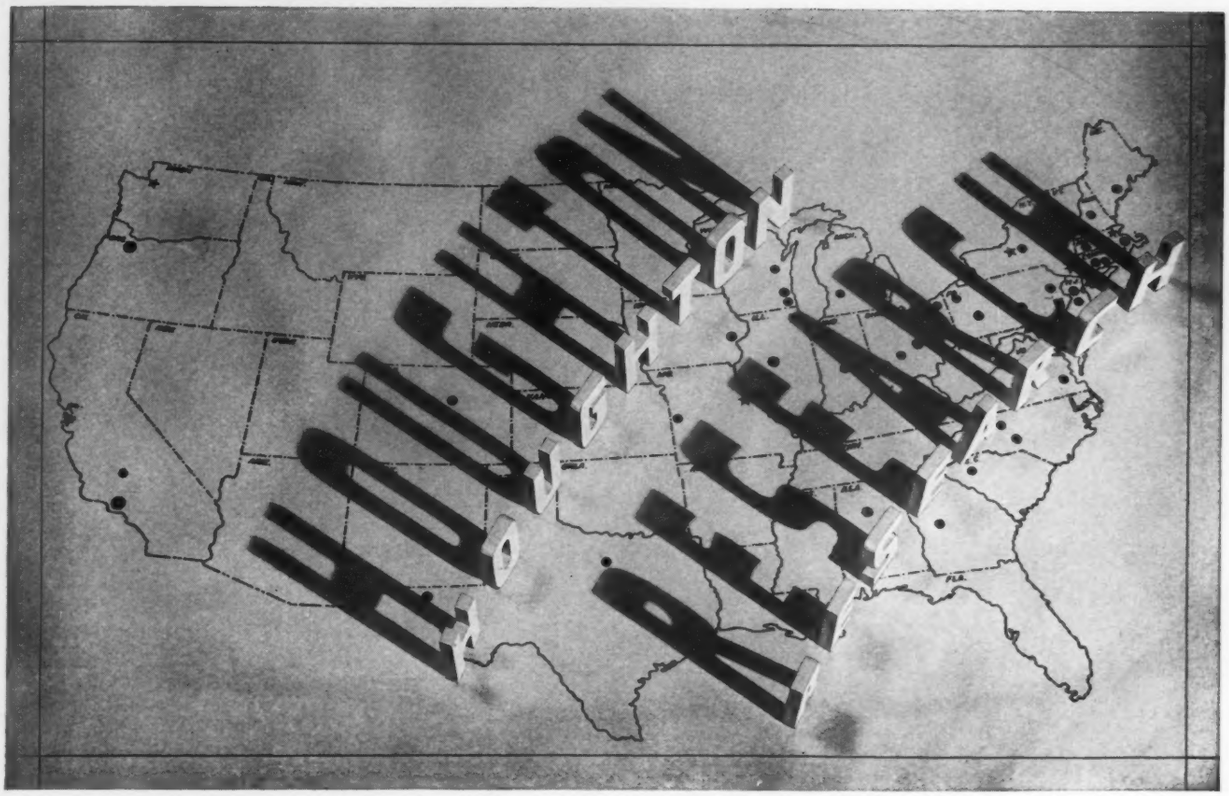
*Single Room and Private Bath* $3.00 *Double Room with Two Beds and Private Bath* $5.00

SPECIAL!
*Breakfast, 75 cents; Luncheon, One Dollar; Dinner, $1.75*

WALTON H. MARSHALL, *Manager*

***Park Avenue at Thirty-fourth St., New York.***






# . . . covers the textile industry . . .

On the map above, each dot means a Houghton Man, each star a warehouse. Houghton covers the country.

A business can grow only through service, and in our business service is possible only through research.

Therefore "research" is the keyword of Houghton success. There is nothing accidental about Houghton products for the textile industry. Each developed from practical knowledge of your problems, plus laboratory research, plus trial and test in the industry.

In addition to the Houghton Research Laboratory, our Control Department checks the quality of every raw material and every batch of finished material, assuring you standard quality. No product leaves our factory without the Control Department's O.K.

Only a company with these facilities and experience can hope to meet changing conditions in a progressive industry.

**Houghton products include:**

**For Cotton Mills:**
Cotton Softeners
Spraying Oils
Warp Conditioners
Houghton's Aids—Wetting-out Agents

**For Silk and Rayon Mills:**
Silklubric
Raylubric
Houghto-Jel
Hosiery Wonder Powder
Olive Wonder Powder
Sulfol

**For all Textile Industries:**
VIM TRED Leather Belting
OKAY TRED Leather Belting
Textile Leathers for all purposes
STA-PUT Industrial Lubricants

**BE SURE TO SEE OUR DEMONSTRATION OF COTTON SIZING AT BOOTH NO. 449 SOUTHERN TEXTILE EXPOSITION**

## E. F. HOUGHTON & CO.

**Chicago — PHILADELPHIA — Detroit**

**Southern District Office — Charlotte, N. C.**

# IT HELPED MAKE MILLIONS FOR HIM

# IT CAN MAKE MONEY FOR YOU

Much of the late Andrew Carnegie's success is commonly attributed to the fact that he was always quick to recognize and employ the abilities and experience of others, even though his own mentality and experience were exceptional.

The moderate size of the average chemical processing plant or department in the textile industry does not permit the *hiring* of *group* ability and experience on any such scale as did Carnegie. This fact, plus a rapid increase in number and complexity of textile chemical problems, in recent years, has created a definite need in the industry for the *occasional* services of textile chemists of a high order.

CHEMICALS

**Sizing and Finishing Gums and Compounds • Soluble Gums • Softeners • Soluble Oils • Tallow • Waxes • Soaps • Flour • Dextrines • Starches • Pigment Colors and Lakes • Ammonia • Acids • Blue Vitriol • Borax • Bichromate of Soda • Bichromate of Potash • Liquid Chlorine • Chloride of Lime • Caustic Soda (solid and flaked)**

A-H Consultation Service is filling this need, free of charge, for many textile plants to day. This service is rendered by a staff of specially trained chemists, assisted by a completely equipped, modern laboratory and a company experience of 120 years.

Collective thinking helped make millions for Carnegie. It can make money for you. Have you a new sizing, finishing or printing problem calling for group analysis and prescription? Would you like to check up on the efficiency of your present routine processing methods?

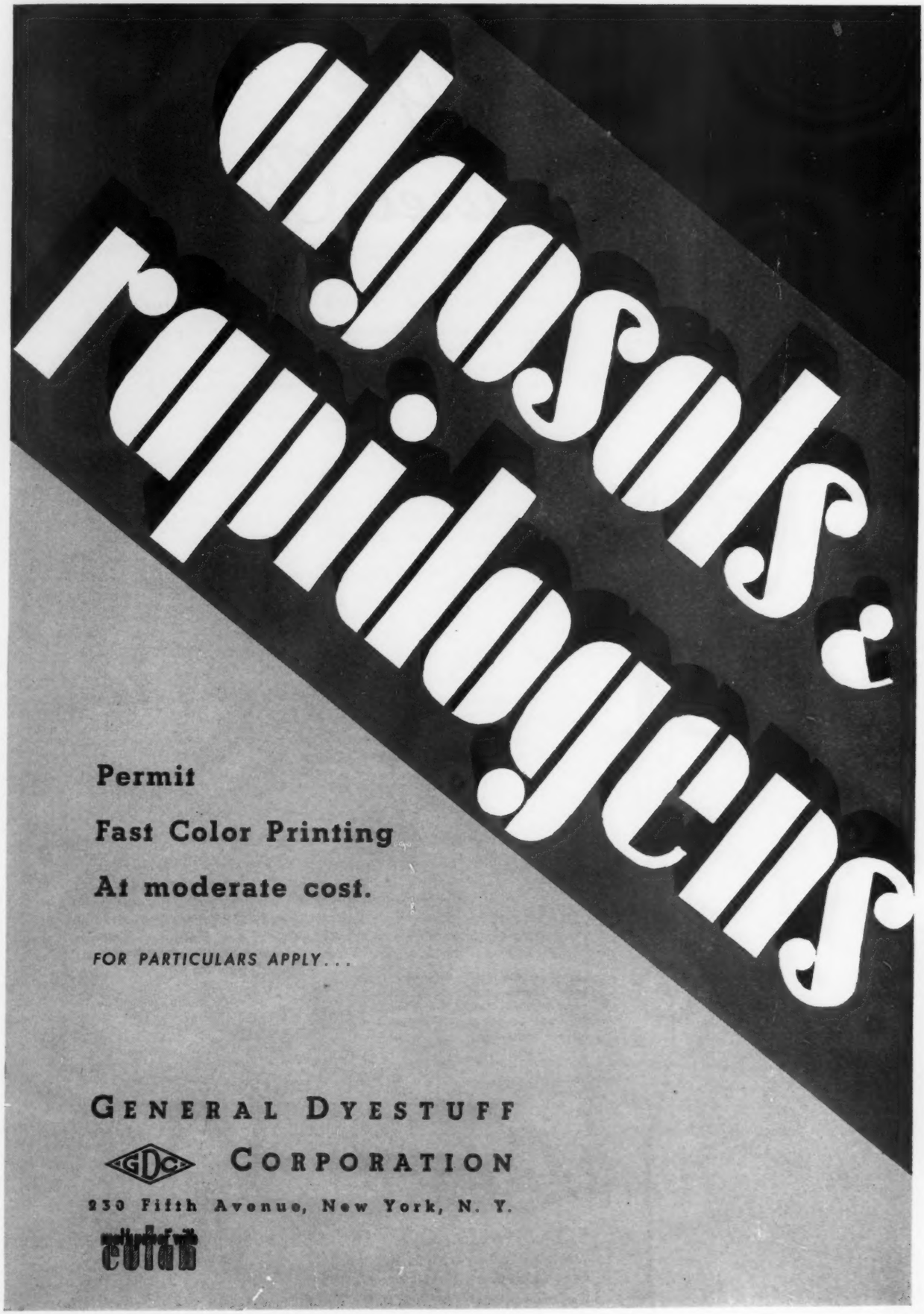
If so, tell us your problem and we may be able to make recommendations that will save you money. No obligations.

# Arnold, Hoffman & Co., Inc.

*Established 1815. Plant at Dighton, Mass.*

**PROVIDENCE, R. I.**

**New York • Boston • Philadelphia • Charlotte**


Algosols &
Pigments
Permit
Fast Color Printing
At moderate cost.
FOR PARTICULARS APPLY...
GENERAL DYESTUFF
GDC CORPORATION
230 Fifth Avenue, New York, N. Y.

# Specify Laurel Products

FOR

SILK

COTTON

WOOL

RAYON

*Soaking, Degumming, Finishing:*

Specially prepared soluble (sulphonated) oils and Pure Green Olive Oil Soap for preparing soaking bath. Boil-off oils and degumming soaps for silks (pure dyes and weighted) and hosiery. Finishing oils and compounds, and dull finishes for all silks.

*Bleaching, Dyeing, Finishing:*

Laurel Brand Kier Oils and compounds assist in producing better whites by removing cotton waxes, oil stains, and foreign particles from the goods. Preparations for wetting out and penetrating, assisting in bleaching and dyeing. Softeners, gums and prepared products for finishing of cotton piece goods.

*Lubricating, Scouring, Fulling:*

Laurel Brand Wool Oils and emulsions carefully prepared for lubricating stock before spinning. Compounded to give maximum lubrication and readily scoured from the goods. Soaps for scouring raw wool, scouring of woolen worsted piece goods. Products for individual requirements.

*Soaking, Dyeing, Finishing:*

Our laboratory has developed through extensive research a product for preparing the rayon soaking bath to produce proper results on rayon crepes—giving the desired elasticity and handle. Sizings for rayon warps and skeins... Special soaps and compounds for scouring... Penetrating oils and softeners.

Laurel products will help you secure better processing results. Each one has been developed to fit the process and the fiber. Let our Laboratory assist you in your problems.

Laurel

SOAP MFG. CO., Inc.

WM. H. BERTOLET & SONS

2600 Tioga Street . Philadelphia, Pa.

*Warehouse Stocks at:* Paterson, N. J. • Chattanooga, Tenn., • Charlotte, N. C.

# SIGNS OF PROGRESS

**VISIT OUR BOOTH**
*at the Southern Textile Exposition Greenville, S. C., April 8 to 13.*

**STEIN, HALL & COMPANY, INC.**

EST. 1866

285 MADISON AVENUE NEW YORK CITY

BOSTON PROVIDENCE CHICAGO PHILADELPHIA CHARLOTTE SAN FRANCISCO
TORONTO ROCHESTER BUFFALO LOS ANGELES

HEADQUARTERS FOR ALL TEXTILE STARCHES. DEXTRINES. GUMS AND TAPIOCA FLOURS

# COSTS

When you apply the exactly right kind of oil for each specific operating condition—

*You use less oil—saving oil costs*

*You insure your operations against shut-downs—saving production costs*

*You give highest protection to the mechanism against wear—saving repairs and replacements*

Standard Oil knows oil. Use the specific lubricants which have been created for your various and specific needs.

●

## STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

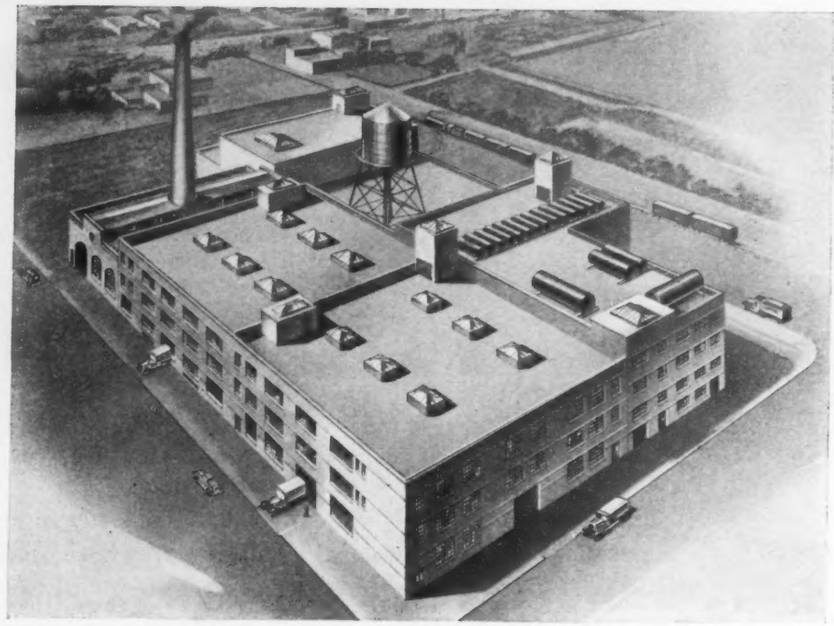
*Principal Offices:*

Atlanta, Ga.
Birmingham, Ala.
Jackson, Miss.
Jacksonville, Fla.
Louisville, Ky.
Tampa, Fla.

# ONYX TEXTILE COMPOUNDS

## owe their effectiveness and uniformity to this

# MODERN PLANT



***Extensive manufacturing facilities--complete laboratories --experienced personnel at the service of every mill!***

It is not accident or luck that ONYX textile compounds give you more effective, uniform, economical results in your mill.

Producing ONYX compounds is a highly specialized, scientific responsibility. It requires a large, modern factory—completely equipped laboratories—a staff of skilled textile chemists—specially designed equipment—and wide experience with every phase of textile processing and finishing.

The sole aim of all research, analysis, synthesis and plant-control laboratory work done in the ONYX plant, is toward the advancement of textile processing and finishing methods.

To learn how this precision manufacture benefits your mill, try ONYX compounds for your bleaching, sizing, dyeing, printing and finishing . . . on all fabrics. Write for samples, stating operation and fabric. Let our laboratories help you with any processing problem.

**ONYX OIL & CHEMICAL CO.**

*Specialists on Finishing Materials.*

Jersey City, N. J.

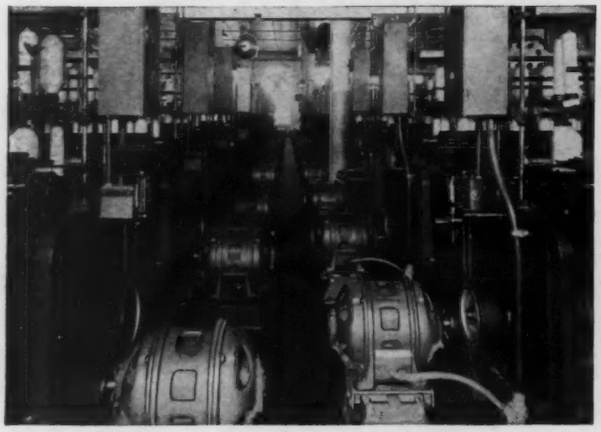
Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

**Onyx** LABORATORY-CONTROLLED **PROCESSING & FINISHING COMPOUNDS**

## *More and more textile engineers say:*

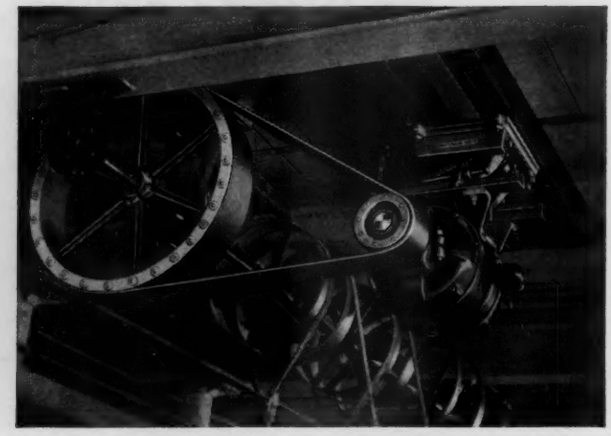
# "The most practical motor drive"

*— for individual machines*



87 ROCKWOOD *Spinning Frame Drives at Erwin Cotton Mills, Cooleemee, N. C. Motors are 8" off floor.*

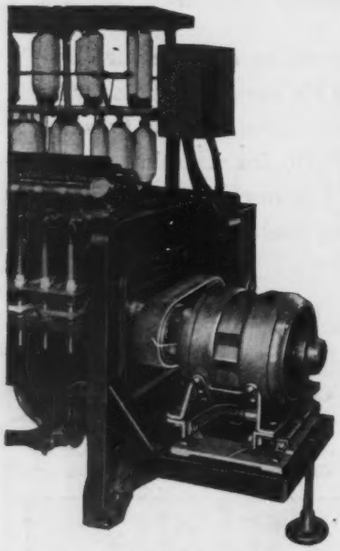
*— for lineshafts*



*The* ROCKWOOD *Ceiling Drive eliminates maintenance and insures uniform shaft speeds.*

**SEE THE ROCKWOOD EXHIBIT AT THE SOUTHERN TEXTILE EXPOSITION**

. . . See the various types of ROCKWOOD Drives in operation. ROCKWOOD Engineers will be on hand to give you complete information.



Do you prefer shelf-mounting for motors driving spinning frames? Here is a practical application—one of the many ROCKWOOD Drives at Rowan Cotton Mills, Salisbury, N. C.

THE preference for ROCKWOOD Drives is steadily growing. Each installation wins additional enthusiastic endorsement. The news of ROCKWOOD DRIVE performance spreads from mill to mill. More and more textile engineers agree that here, indeed, is a drive offering many outstanding advantages.

For what other type of drive offers the high *sustained* power-transmitting efficiency of flat belts operating under *controlled* tension? What other drive provides a simple, sure way to *establish* proper belt tension required for the load? What other drive *automatically maintains* the correct belt tension? What other drive is so inexpensive and easy to install? What other drive can equal the ROCKWOOD Drive in enduring dependability and low-cost maintenance?

Before you change any drives in your mill—either for lineshafts or individually driven machines—investigate ROCKWOOD Drives. ROCKWOOD engineers will gladly make practical recommendations—without obligation.

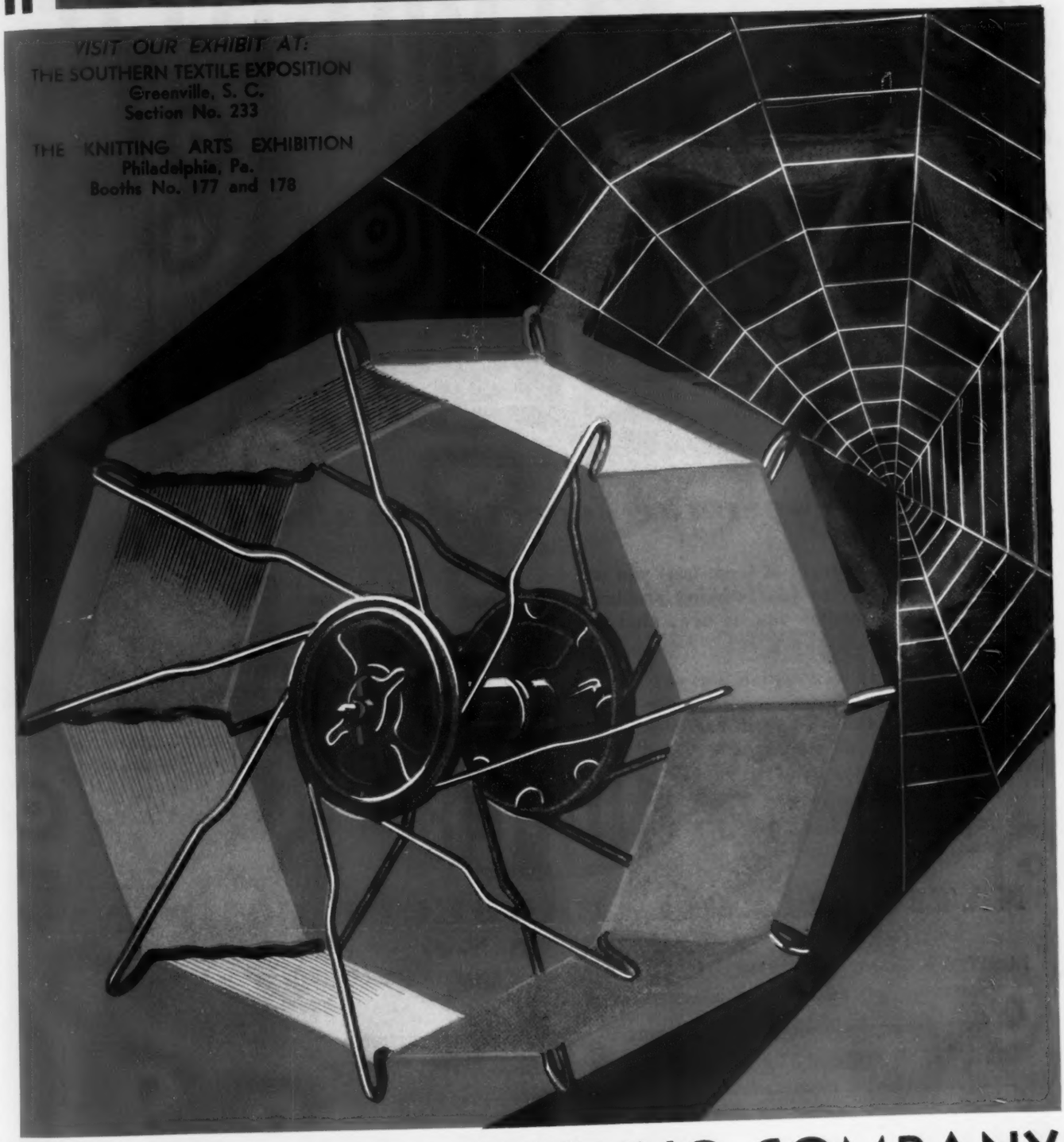
**THE ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, INDIANA**
*Division of General Fibre Products, Inc.*

**ROCKWOOD**
**SHORT-CENTER FLAT BELT DRIVE**

DEALERS WITH WAREHOUSE STOCKS
IN ALL PRINCIPAL CITIES

# Your Success Starts in the Winding Department!

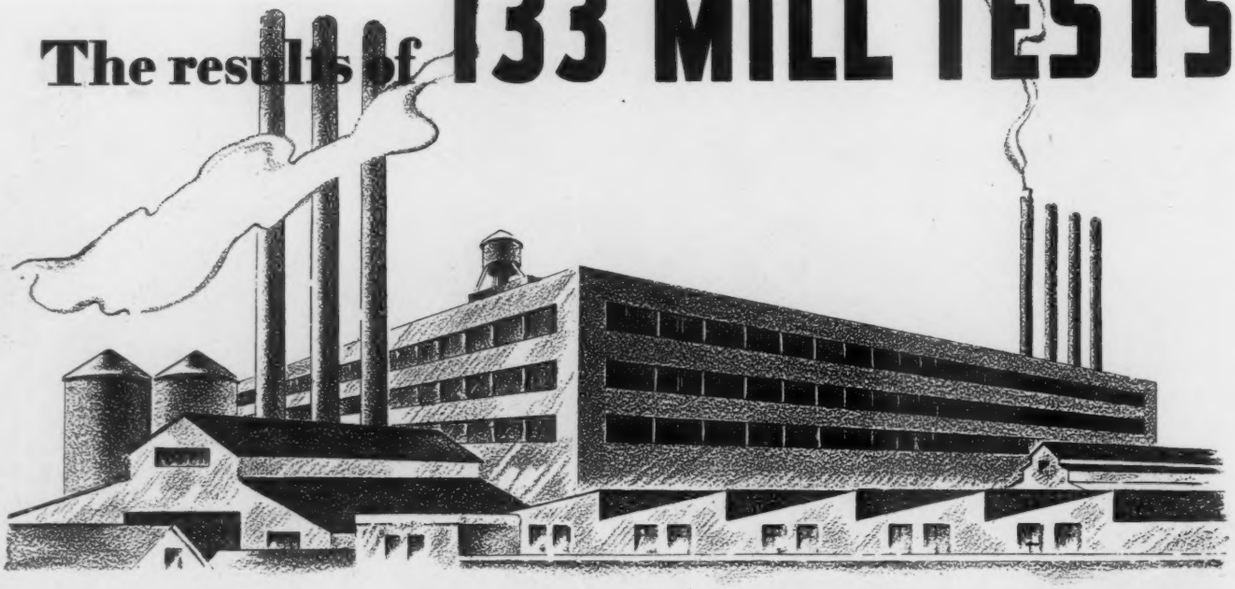
The obsolete, "century old" wooden swift is a parasite to progress! It robs quality, efficiency and profits!
Ask for Brugger's patent self-balanced expanding swifts "Perfect" increasing production by 20 to 100%




THE BRUGGER WINDING COMPANY
41 EAST GOWEN AVE. PHILADELPHIA, PA.

# *Now Available!*

## The results of 133 MILL TESTS



***. . to discover the secret of faultless pebble***

IN the unbiased record of these tests you will find the answer to your soaking problems. It contains information that is new, vital and accurate.

To secure this information for you, Nopco conducted 133 tests in a mill under actual production conditions. Questions relating to correct size ratio, influence of embossing, and many others, have been answered definitely by exacting plant trials.

In a new technical booklet, illustrated with un-retouched photographs, Nopco gives you the complete data. Send for your copy of PEBBLE EFFECTS OF VARIOUS SOAKING TREATMENTS today—and profit by getting the real *facts* about pebble. It may be the means of improving *your* pebble.

NOPCO

**NATIONAL OIL PRODUCTS COMPANY**

**HARRISON, N. J.**

BOSTON CHICAGO SAN FRANCISCO

*Members of Throwsters' Research Institute*

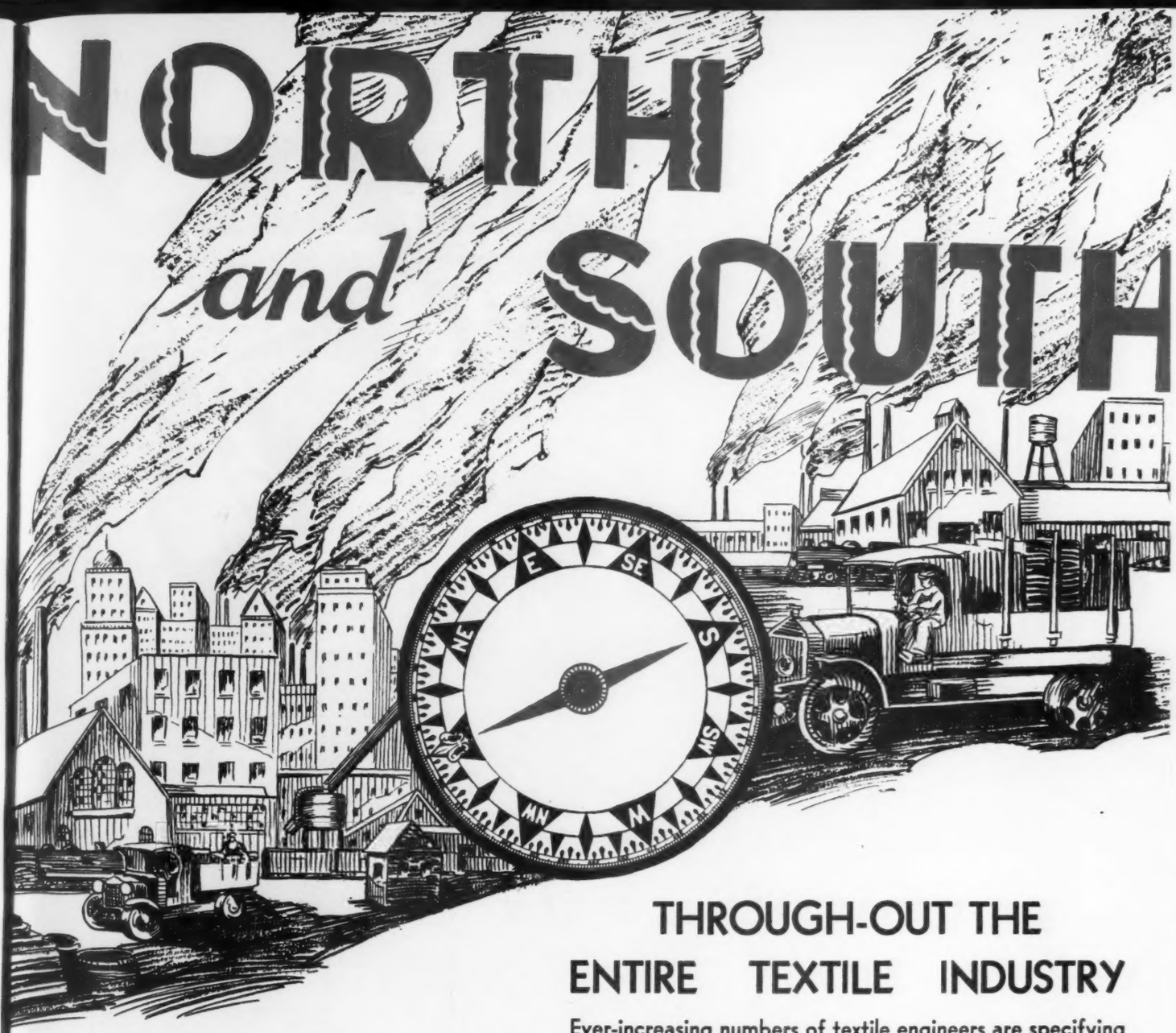
**MAIL THIS COUPON FOR FREE BOOKLET**

NATIONAL OIL PRODUCTS COMPANY, Harrison, N. J. C-4

Gentlemen: Please send me the FREE booklet PEBBLE EFFECTS OF VARIOUS SOAKING TREATMENTS.

Name_____ Company_____

# NORTH and SOUTH




## THROUGH-OUT THE ENTIRE TEXTILE INDUSTRY

Ever-increasing numbers of textile engineers are specifying BROOKS IMPROVED BOILER METAL TREATMENT in their plants, knowing it to be the safest, surest and most economical way of cleaning their boilers and keeping repairs at a minimum.

BROOKS IMPROVED BOILER METAL TREATMENT is ideal for use in plants using steam for processing.

BROOKS TREATMENT does not impart odor, chemicals or any other injurious matter into the steam.

BROOKS IMPROVED BOILER METAL TREATMENT is easy to inject into the boiler and requires no tests or expensive mechanism for its successful operation.

If you are not already a BROOKS user, a postcard to the BROOKS OIL COMPANY, CLEVELAND, OHIO, will bring you full details of our 60 day trial offer.

THE BROOKS LINE

*Brooks High Temperature Thermo Paint*

*Brooks Aluminum Paint (Hot or Cold Surface)*

*Brooks Boiler Thermo (Plastic Cement)*

*Brooks Can't Leak Roof Coating*

# BROOKS OIL CO.

CLEVELAND, OHIO

# D. A.
DRY AIR

## EXACTS ITS TOLL OF REGAIN

Regain represents dollars. It is only logical that Dry Air in its attack upon production and profitable operation should pick this vulnerable spot. Loss of regain is practically eliminated with the presence of Adequate Humidification.

The problem of providing Adequate Humidification is a technical engineering one. Only specialists can cope with the many and varying factors involved.

Providing Adequate Humidification has been the task of AMCO engineers for over 47 years. Their outstanding success has made AMCO engineering and AMCO equipment outstanding in their leadership.

**AMCO**

**IDEAL JR. HUMIDIFIER**

Practical humidification experience and extensive engineering research produced this long service Humidifier. An efficient and practical head for humidifying, air washing and cooling.

**Catalog describing this and other AMCO Humidifiers readily available.**

**IF IT'S A PROBLEM OF HUMIDIFICATION CALL IN THE AMCO ENGINEER**

## AMERICAN MOISTENING COMPANY

ATLANTA, GA. BOSTON, MASS.

Established 1888
PROVIDENCE, RHODE ISLAND

CHARLOTTE, N. C. GREENVILLE, S. C.

# CHALLENGER

## TRANSMITS MORE POWER

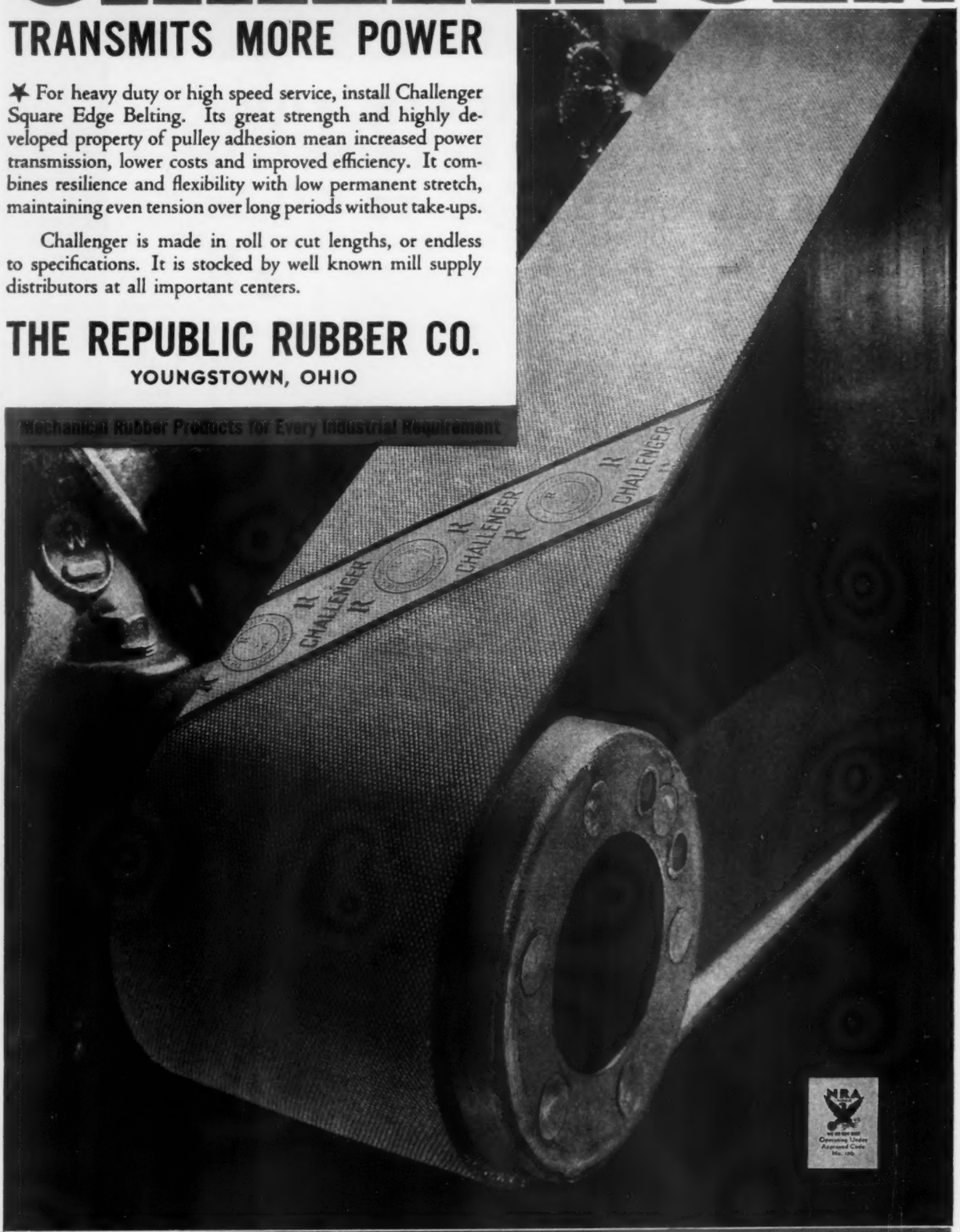
★ For heavy duty or high speed service, install Challenger Square Edge Belting. Its great strength and highly developed property of pulley adhesion mean increased power transmission, lower costs and improved efficiency. It combines resilience and flexibility with low permanent stretch, maintaining even tension over long periods without take-ups.

Challenger is made in roll or cut lengths, or endless to specifications. It is stocked by well known mill supply distributors at all important centers.

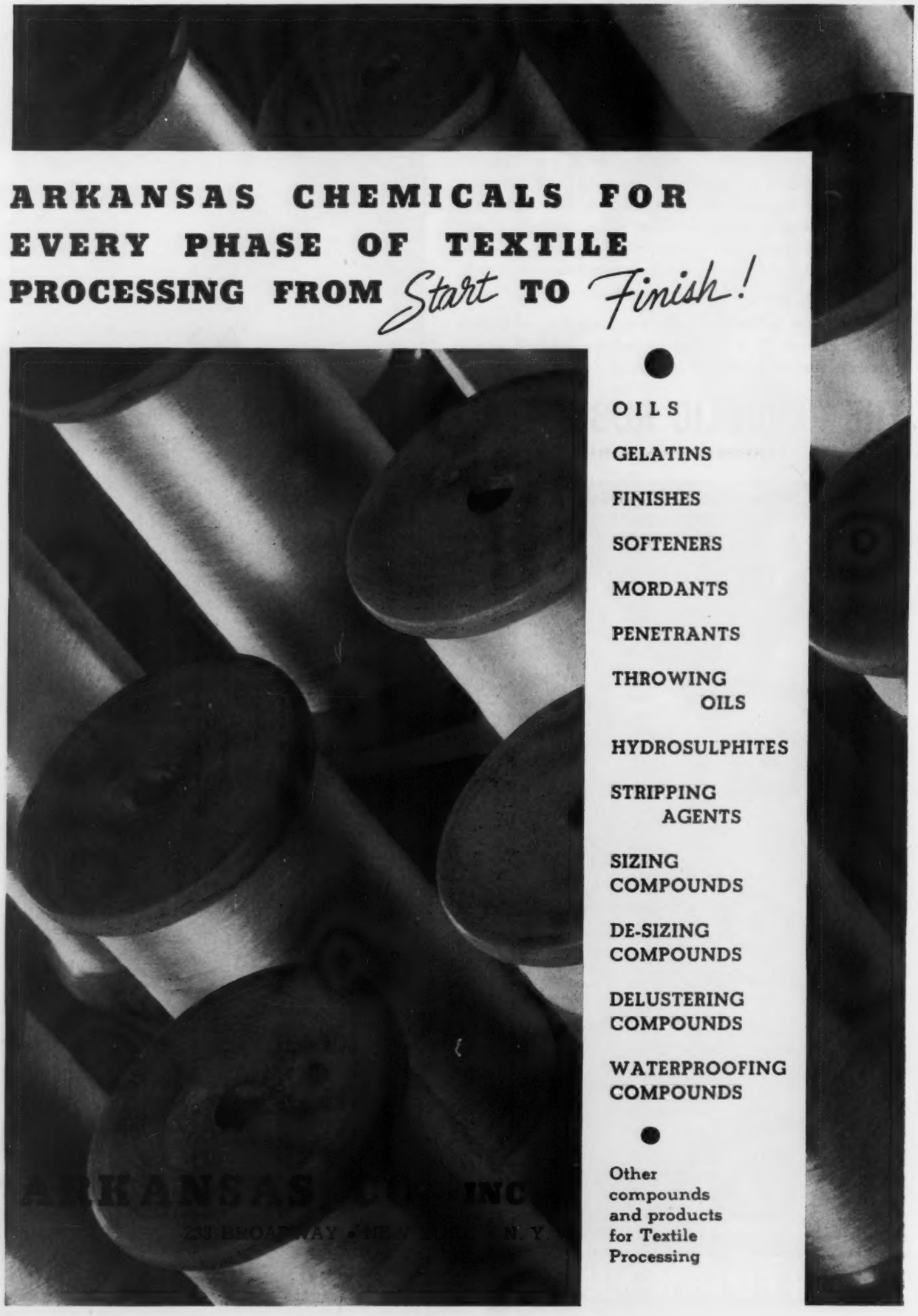
## THE REPUBLIC RUBBER CO.

YOUNGSTOWN, OHIO

Mechanical Rubber Products for Every Industrial Requirement




ORDER REPUBLIC RUBBER PRODUCTS FROM YOUR DISTRIBUTOR



**ARKANSAS CHEMICALS FOR EVERY PHASE OF TEXTILE PROCESSING FROM *Start* TO *Finish!***

OILS

GELATINS

FINISHES

SOFTENERS

MORDANTS

PENETRANTS

THROWING OILS

HYDROSULPHITES

STRIPPING AGENTS

SIZING COMPOUNDS

DE-SIZING COMPOUNDS

DELUSTERING COMPOUNDS

WATERPROOFING COMPOUNDS

Other compounds and products for Textile Processing

# *Which* will you cut — PRICE, QUALITY *or* *Power Cost?*

MANY a manufacturer can find the price advantage he seeks, without sacrificing profit or quality, by reducing his power costs before his competitor does. Investigations reveal that the average plant wastes one-half of what it spends for power. This loss occurs within the plant and is therefore controllable. Power costs are a substantial part of manufacturing cost. The possibilities of competitive advantage are obvious.

THE quickest and most economical way to reduce power costs is to rearrange and modernize your present equipment. Minimum power cost is never attained until *the right way to get the power to the work* is used throughout the plant. The economics of the problem involve investment costs, carrying charges, maintenance and operating costs, loss of production and power waste.

FOR innumerable machine operations the right way to get the power to the work is Modern Group Drive (one *large* motor for a group of related machines). For those machines that can't be grouped, the right way is Unit Drive (individual *smaller* motors costing many times more per h.p.). Where you have related machines which should be grouped into manufacturing units, properly planned Modern Group Drive will save you real money.

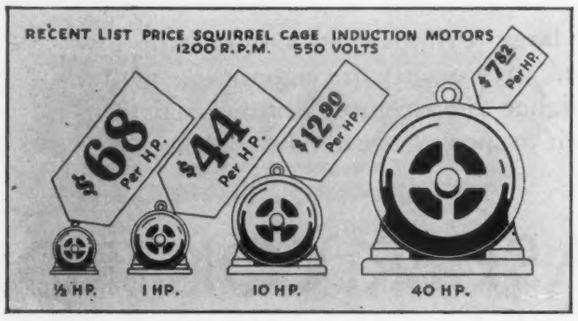
MODERN Group Drive requires less investment cost and carrying charges; it reduces operating and maintenance costs; it minimizes power waste; in short, it converts wasted power dollars into net profit. Our Red Book, free on request, gives in layman's language and simple graphs "A practical analysis of some fundamentals of Industrial Power Transmission." Write for it today.

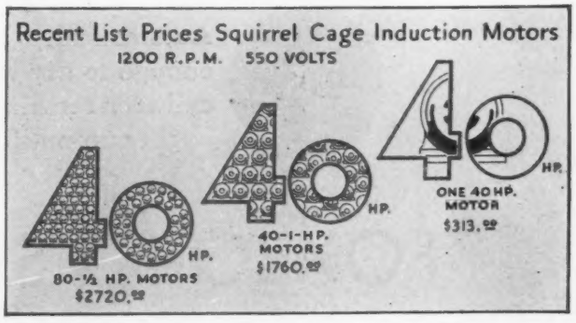
**POWER TRANSMISSION COUNCIL**
(SPONSORED BY MECHANICAL POWER ENGINEERING ASSOCIATES)

*An association of producers and distributors of power, power units and mechanical equipment for the transmission of power*

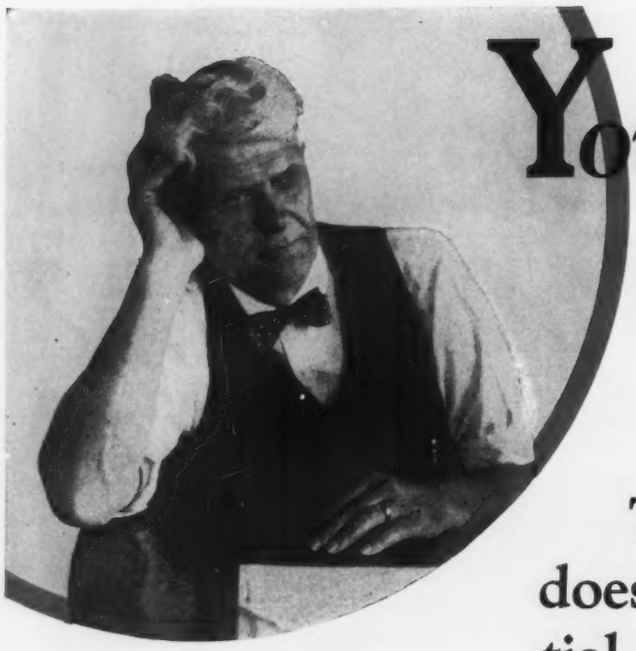
**370 Lexington Avenue, New York**

*This advertisement also appears in Business Week and 4 other publications*




**A POWER DOLLAR SAVED IS A PROFIT DOLLAR EARNED**



# You must have to Cure

★

## The FOXBORO SYSTEM does four things—all essential in the slasher process:

**1** Automatically cooks size at a correct temperature for proper time. When finished steam is shut off, a signal light flashes.

**2** Automatically holds level of size constant. A variation in level means light and heavily sized yarn on same beam.

**3** Automatically holds temperature in size box at predetermined point—uniform consistency, no waste of steam or starch.

**4** Automatically keeps large cylinder at temperature low enough to dry wet sized yarn evenly throughout ... smaller cylinder remains at higher temperature, drying yarn thoroughly on outside, with proper moisture left in center.

## *FOXBORO SLASHER CONTROL

COMPLETE TEXTILE MILL

# ★ Complete Slasher Control

# LOOM DANDRUFF

Those *dandruff-like* particles that settle around your looms—SIZE FLAKINGS—are positive proof that there is something wrong with your slasher control system.

The Foxboro System, because it is COMPLETE, positively cures "loom dandruff." But that is only *one* thing it does. Consider these typical results in actual service.

In one mill—a 29% saving in the cost of size ingredients—enough to pay for the control instruments.

A 12-15% decrease in steam consumption. In the same mill, a 15-20% increase in slasher speed, with a 25% decrease in loom stoppage due to warp breakage.

And these savings were only incidental to the even more desirable results of getting uniform warps in much better weaving conditions.

The Foxboro System of Slasher Control is an engineered system, COMPLETE in its application and results—not merely the application of one or two instruments.

Investigate this COMPLETE System of Automatic Control for *your* slashers. Talk to a Foxboro Engineer (without obligation). You may profit from his facts . . . write us, today.

★

## The FOXBORO COMPANY, FOXBORO, MASS.

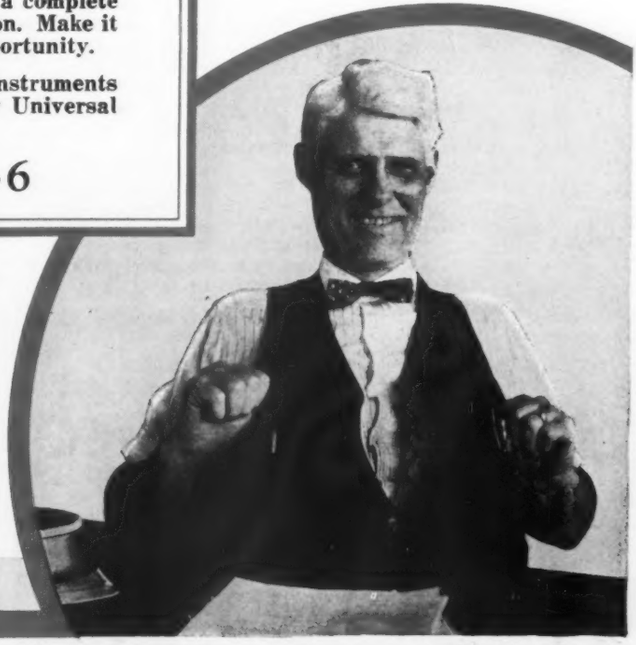
**Atlanta Office, 161 Spring St., Bldg.** **Branch Offices in Principal Cities**

## *See Us at* GREENVILLE!

**In our booth No. 424-5-6 you will see a complete slasher control installation in operation. Make it a point to take advantage of this opportunity.**

**Several other well-known Foxboro instruments will be on display including the new Universal Flow Meter.**

## BOOTH 424-5-6



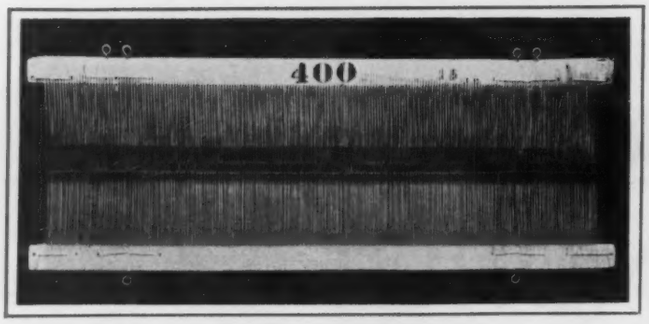
**FOXBORO**

REG. U. S. PAT. OFF.

*THE COMPASS OF INDUSTRY*

# IS ENGINEERED!

INSTRUMENTATION




# Here's the Harness for BETTER WEAVING

**Chafeless Cord decreases warp breaks and lessens loom stops; adds remarkably improved cover to fine and medium weaves. Cuts repair and renewal costs, too.**

We have gone to great lengths to make Chafeless Cord the finest "producing" cotton harness made. Each change that we've made has been dictated by more efficient weaving demands. For instance:

BETTER COVER. Varnish blisters, rough edges and cracked surfaces cut tiny lint fibres from warp ends. This makes for sleaziness. To reduce this trouble, 5 glass-smooth coats of varnish, baked 8 hours each are applied to Chafeless Cord to produce a remarkable evenness of finish. Thus this Warp-Saving Finish allows warp ends to come through free and full, to go into the weave, filling up spaces. The result is Better Cover.

EFFICIENT PRODUCTION. Since some harness is too rigid and harsh, our next step was to incorporate in Chafeless Cord a faultless flexibility along with its smoothness. As a result weavers report a reduction in warp breakage and loom stoppage. So Chafeless Cord gained a reputation for production benefits.

LOWER REPAIR & RENEWAL COSTS. We discovered that it was the durability of twine finish, not the strength of the twine that was responsible for harness life, so we developed a tough, flexible chafe-proof finish that outlasted ordinary harness considerably. Then we added a humidity proof overdressing making Chafeless Cord impervious to moisture as well as wear. The result is a longer-life, more economical harness.

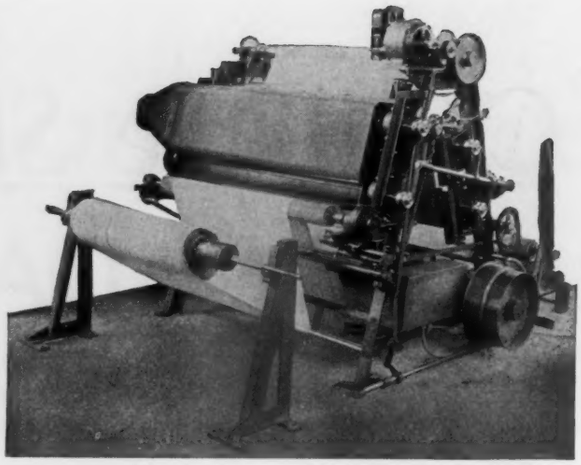
If you are interested in ways and means of cutting harness costs; in improving the quality or quantity of your weave, send us your specifications for Chafeless Cord Harness. Equip a section; see for yourself the better weaving results possible with a harness with a Warp-Saving Finish. Write, telegraph or telephone:

## EMMONS LOOM HARNESS CO.

Lawrence, Mass.

*Manufacturers of*

Cotton Harness — Mail Harness — Selvadge Harness
Flat & Duplex Steel Heddles — Non-Slip Mail Harness
Jacquard Heddles — Mending Eyes and Twine — Heddle Frames
Pitch Band Reeds — All-Metal Reeds — Warper & Leice Reeds
Slasher & Striking Combs — Wardwell Loop & Doll Pickers



# DO YOU MANUFACTURE DUCK?

*—if so, here's how you can save $72 to $220 weekly!*

**Leading manufacturers of duck are saving $72 to $220 a week by removing selvage threads, leaf, and motes AUTOMATICALLY with this new low-cost Hermas shear, using it in conjunction with their present brushing and rolling equipment.**

**They have eliminated slow, expensive, hand-work formerly employed and are doing a better job. One user, for example, reports that only 3 hanging ends were left after 4800 yards of cloth were run through his Hermas shear . . . and these ends were near the seam.**

**The new Hermas has a greatly improved automatic seam opening device which never cuts seams no matter how close together they may be.**

**It can be used for heavy and light fabrics — from duck to georgette and organdie — with equal success. It is of the same superior design that has won a place for Hermas shears in 3 mills out of 4 using shears in the U. S. today. The price is the lowest at which the 4-knife shear has ever been offered. Start to save this $72 to $220 weekly now. Write for free descriptive folder of the new, low cost Hermas Shear today.**

## HERMAS MACHINE CO.

Warburton Ave., Susquehanna R. R., Hawthorne, N. J.

*Southern Representatives:*
Carolina Specialty Co., Charlotte, N. C.

HERMAS

Horizontal open design REEVES with handwheel control. Mounts in any position on floor, platform, ceiling; or may be incorporated in driven machine.
Horizontal enclosed design with Mechanical Automatic Control. Connect speed control lever to compensator roll for synchronization in range finishing and other winding processes.
New model Spinning Frame Drive for frames driven by belt.
Vertical enclosed design with handwheel control. For use where floor space is limited.
Vari-Speed Motor Pulley for direct application to standard shaft of any constant speed motor; provides infinite adjustability over 3:1 range.
New model Spinning Frame Drive, with individual motor.

**• These are only a few of the many units in the complete REEVES Line of Speed Control Equipment**

# THE *Correct* SPEED CONTROL
## FOR *Every* TEXTILE PLANT REQUIREMENT

● Variable speed requirements in the textile industry demand variable speed drives of many different sizes, designs, types, controls—and a wide range of speed ratios.

REEVES engineers discovered years ago that one standard unit *cannot* serve all needs. Thus REEVES offers a complete line of transmissions—a *correct* unit in every instance to insure smoother, faster, more uniform production on beamers, warpers, slashers, tenter frames, dry cans, conditioners, extractors, calenders, mercerizers, inspection tables—in fact on any production unit from preparation to finishing.

Three years ago REEVES introduced the first successful automatic variable speed control for ring spinning, using the same operating principle as the *time-tested* REEVES Variable Speed Transmission. With this long-needed development—available for either filling and combination build or warp build—it is now easy to maintain an even tension and twist on yarn from empty to full bobbins and secure many vital improvements in yarn quality.

*See the* REEVES *Display at the Textile Exposition*

For providing infinite speed adjustability to each individual machine or perfect synchronization of machines in range, there is no other means of obtaining and holding the same degree of precision and uniformity that is secured through REEVES Variable Speed Control. What machines in your mill need this accurate, wide-range speed selectivity? Our engineers will show, without any obligation, how easily REEVES Variable Speed Control units may be applied. Write us today for complete information on a specific application in your mill.

**REEVES PULLEY COMPANY, COLUMBUS, INDIANA**
Without obligation, send facts on applying REEVES Speed Control to:

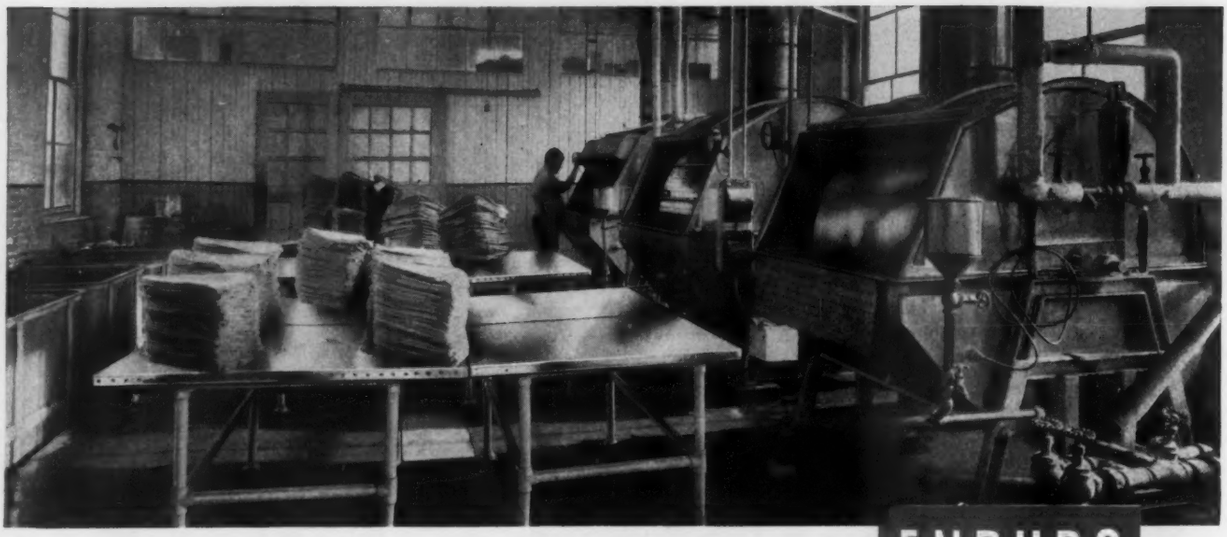
*Name*.....

*Company*.....

*Address*.....

(4-35) Also send copy of Catalog T-99.

# NO 'BOILING OUT' NO 'OFF SHADES'



ENDURO
REPUBLIC'S PERFECTED
STAINLESS STEEL

## *If the equipment is* ENDURO!

Changing from dark to light shades presents no problem if your dye equipment is made of ENDURO, Republic's perfected stainless steel. A thorough flush with water is all that is necessary. This simple operation quickly removes every trace of color from the hard, smooth surface of this long-life metal; and, what is equally important, ENDURO does not react with the dyestuffs. Thus all danger of "off colors" is eliminated.

You can quickly estimate the savings ENDURO will make in your dyehouse by figuring present costs for cleaning and re-dyeing. Then, change these wasted hours into productive hours. It makes a sum worthy of immediate consideration, when the solution is so simple. Ask Republic for the full facts today.

Republic Steel CORPORATION

CENTRAL ALLOY DIVISION, MASSILLON, OHIO
GENERAL OFFICES: YOUNGSTOWN, OHIO

©C1B 257820

Vol. 99
No. 4

Robert W. Philip,
Editor

*Published Monthly by*
W. R. C. SMITH
PUBLISHING CO.
Dalton and Atlanta, Ga.

W. R. C. Smith,
*President*
W. J. Rooke,
*Executive Vice-Pres.*
T. W. McAllister,
*Editorial Director*

*Publishers Also of*
ELECTRICAL SOUTH
SOUTHERN HARDWARE
SOUTHERN POWER JOURNAL
SOUTHERN AUTOMOTIVE JOURNAL

*Editorial and Business Offices*
GRANT BUILDING
ATLANTA, GEORGIA

MEMBER OF A. B. P.
MEMBER A. B. C.

PUBLISHED MONTHLY
ANNUAL SUBSCRIPTION—$1.00
CANADA—$1.50; FOREIGN—$2.00

JOHN B. SHAW, *sales manager*, 39 Grove St., Auburndale, Mass. Boston Exchange, West Newton 1031.
ARTHUR C. SHAW, *assistant*, 19 Holman Road, Auburndale, Mass.
W. S. CUSHION, *vice president*, 506 The Arcade, Cleveland, Ohio.
JOHN C. COOK, *western manager*, Room 1500, 32 West Randolph St., Chicago, Ill.
W. A. MCGEE, *Carolina manager*, Box 562, Charlotte, N. C.

# COTTON

## Contents for APRIL, 1935

### General and Technical

Everything in Readiness for the Southern Textile Exposition ---- 83
American Association Convention at Augusta to be Important Event ---- 85
Warp Breakage—A Study of Its Importance and Elimination, by Albert Palmer ---- 86
Correct Tension on Spinning Bands, by H. H. Willis ---- 90
George Sloan Forms Merchandising Firm ---- 92
Guide to Exhibitors and Representatives at Southern Textile Exposition ---- 93
Some Remarks on Level Dyeing, by Harold Schroeder ---- 102
Carding and Spinning Discussed at Atlanta Meeting ---- 104

### How Other Men Manage

Some Helpful Maintenance Methods on Automatic Spoolers and High Speed Warpers ---- 137
Uniform Card Settings to Produce Same Amount of Waste Not Practical ---- 143
Means of Preventing Slubber Bobbins Tangling When 2/3 Full ---- 145
The Qualifications of a Good Loom Fixer ---- 149
Another Fly Frame Kink ---- 150
"I'm a Textile Graduate"—So What? ---- 153
Running Colored Stock Through Draw Frames ---- 157
Storing and Handling a Large Variety of Filling ---- 159

### Knitting Section

Knitting Industry Awaits Exposition and Convention at Philadelphia ---- 163
List of Exhibitors at Knitting Arts Exhibition ---- 165
Dyeing and Bleaching Pigmented Rayon-Mercerized Cotton Hosiery, by W. Ashton Daniel ---- 169
Cleaning and Lubricating Full-Fashioned Hosiery Machines, by Henry W. Hoffmann ---- 170
Managing a Seamless Mill, by Albert T. Russell ---- 177
Handling Short Lengths in Full-Fashioned ---- 183
Keeping Hosiery on Size ---- 185
A Method of Handling Odds Accumulating at Mating Operation on Full-Fashioned ---- 187
Knee-Action Control for Seamers ---- 189
The Knit Goods Markets ---- 191
Review of the Yarn Market ---- 194

### Current Textile Topics

Talk of the Month ---- 116
Politics and Economics Make Their Customary Confusion ---- 116
New England Mill Situation. ---- 120
Comment on the Cotton Market ---- 120
What the Southern Mills Are Doing ---- 122
New Textile Equipment and Publications ---- 124
Timely News Items With a Textile Slant ---- 130
Personal Notes About Men You Know ---- 132
An Old-Timer Says ---- 135

*(Copyright 1935, by W. R. C. Smith Pub. Co.)*

# Dependable Yarns and Knitted Fabrics
## . . . *Nationally Recognized*

The better stores throughout the country are alike in this respect: they want *outstanding values.* ◆ ◆ That's why the products of manufacturers using SPUN-LO, PREMIER and DUL-TONE yarns and knitted fabrics have won national acceptance and recognition. ◆ ◆ These products are *always* built up to definite and unvarying standards, *never* down to meet a price. Dependable mills use them to win and hold customers who appreciate the sales-building power of dependable merchandise. ◆ ◆ Industrial Rayon Corporation, Cleveland, Ohio.

INDUSTRIAL RAYON CORPORATION

APR 10 1935

Vol. 99
No. 4

COTTON

April,
1935

# Everything Is in Readiness for the Southern Textile Exposition

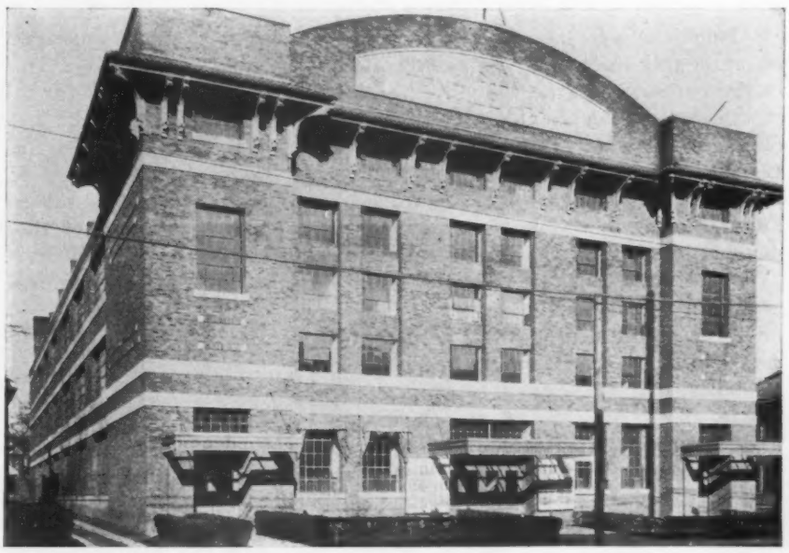
THE Eleventh Southern Textile Exposition, to be held at Textile Hall, Greenville, S. C., during the week of April 8 to 13, will be the focal point of interest among southern textile mill men. Last minute reports indicate that the number of exhibitors is well in excess of 150, and that the intense interest of mill men in the latest developments in machinery, equipment, supplies and services for mills that will be exhibited will result in an unprecedented attendance.

This event, generally known as The Textile Show, is scheduled every two years in Textile Hall, the splendid building erected especially for this exposition. The eleventh exposition, originally scheduled for October 1934, was postponed until this month as a result of the disturbed conditions resulting last fall subsequent to the general textile strike. Every indication is that from all standpoints the postponement will be a helpful occurrence.

While the industry is beset by many a problem still, one of these very problems—that of the necessity for efficient operation at economical cost—will intensify the need of attendance at the exposition in order to keep posted on what is available to that end. As reflected in the February Modernization and Maintenance issue of COTTON, southern mill men generally recognize the absolute necessity for improvement in process, method and equipment, in order to keep up with the procession, and for adequate maintenance of plant and equipment in the best possible condition. The exposition, with its large number of exhibitors, reflects the appreciation by manufacturers catering to the textile trade of this condition. It will provide to the individual mill man and the industry as a whole a convenient, timely means of studying and discussing the latest available improvements in practically every line affecting plant operation and textile production.

Perhaps in the history of the whole industry, no similar period of time has witnessed the advances made during the past two and one-half years by concerns serving the industry, which most certainly have not been idle in the development of their equipment and services. Focused in the exhibits at Greenville will be a valuable panorama of these improvements that will merit the presence and careful attention of the industry.

Definite reservations for space make it certain that both main floors of the Exposition building, the steel annex and a temporary annex will be fully utilized for the exhibits. Standing Room Only signs were hung out months ago at practically all Greenville hotels, and in addition, the housing committee of the exposition management has arranged accommodations for many visitors in some of the leading homes of the city, graciously tendered to assist in



TEXTILE HALL

A view of the front of the main building of Textile Hall, Greenville, S. C., which will be the Mecca of textile interests during the second week in April—for the Eleventh Southern Textile Exposition . . . . . .

caring for the influx of visitors. While a well-nigh capacity attendance is assured, the housing committee will be active during the exposition to care for those without reservations to the extent of their ability and facilities. The Southern Railway has arranged for over-night sleepers to leave Atlanta, Ga., and Greensboro, N. C., each night of the week, to arrive in Greenville in the morning and to be occupied throughout the day until the return trip.

Mr. Sirrine

Miss Green

Mr. McPherson

W. G. Sirrine is president and treasurer; Miss Bertha M. Green is secretary; and John A. McPherson vice-president of the Exposition company Photos Mr. Sirrine and Miss Green by Coxe, Greenville, S. C.

The Exposition management, headed by President William G. Sirrine, Vice-President John A. McPherson, and Miss Bertha M. Green, secretary, have worked unflaggingly to provide every factor contributing to a successful week. The results of their past work in operating the big event smoothly, efficiently and to the satisfaction of all are well known to previous exhibitors and visitors.

While the show itself will provide the "main attraction" of the week, there are scheduled a number of meetings and activities in conjunction with it which will augment the attendance and provide further value for specialized groups. A luncheon meeting of the Southern Textile Association, composed of the superintendents and overseers of the southern mills, which originally sponsored the idea of a textile show, will be held on Friday noon, April 12, with J. E. Sirrine, head of J. E. Sirrine & Company, Greenville, and nationally known textile engineer, as the speaker. Culver Batson, president of the Association, will preside, and there will be a number of entertainment features.

Wednesday, the 10th, the Greenville section of the American Society of Mechanical Engineers will hold a one-day meeting, with special attention being given to textile subjects. This will attract a number of widely known engineering experts.

Under the auspices of The Textile Foundation, which is sponsoring a study of educational methods in the country's textile schools, the directors of all of the textile educational institutions of the United States will foregather during the week, to inspect the exposition and to hold a meeting of their group under the direction of Edward T. Pickard, secretary of the Foundation, who will be at the exposition for three days, together with the textile school directors.

Reflecting a recognition of the inventions and improvements in textile machinery and equipment which will be on display, Commissioner Conway P. Coe, of the U. S. Patent office, has accepted an invitation to send a representative to the show to study new devices at first hand.

The exposition itself will be formally opened at 10:00 o'clock on Monday morning, April 8, with simple ceremonies, and will be in operation from 10:00 A. M. to 10:00 P. M., each day through Friday, April 12, and from 10:00 A. M. to 6:00 P. M. on Saturday, April 13, the closing day of the show. An announcement of interest is that tickets will be sold to the public for Monday and Saturday of show week only.

The management has made thorough plans for adequate distribution of tickets to those interested, and the method is described by the management as follows:

"We send a pass to every mill president, secretary, and treasurer, and at the same time inform them we will supply season passes for any of the office staff. To the mill superintendents we send a pass and also one for the master mechanic and each overseer. We offer to send as many single tickets, good for one admission, as desired if the names are listed. Where the superintendent is confident that any given number of people will attend the show and will agree to give the tickets out to those who will actually use them, we do not insist upon names, but usually that is required. Of course those mills near Greenville will send a larger proportion of representatives than those further away.

"In addition, each exhibitor receives free one ticket for every square foot of space taken.

"So it is apparent that the distribution of tickets will enable anyone in the industry who is actually interested in attending the show to secure free admission.

"Tickets will be sold to the public Monday and Saturday only. Of course the show is open every day to textile visitors, from Monday morning until Saturday night."

A phase of Show Week which may not be tangibly apparent in conjunction with the exhibits themselves is the opportunity which the occasion provides for mill men to meet with outstanding engineers and specialists in the various industries serving textiles and with their own contemporaries. This is a feature of tremendous importance to all, particularly under present-day conditions. There are a number of those participating in the show who, as usual, will have comfortable reception booths which are always used for such personal conferences.

So, the by-word of mill men, salesmen and manufacturers for weeks has been, "See you in Greenville at the Show". Mill men exhibitors, and the show management alike look forward to the week as one of profit, pleasure and value.

## Come to See Us: Booth No. 408

EXHIBITORS and visitors at the Southern Textile Exposition are cordially invited to visit COTTON'S booth, No. 408, in the steel annex at the front entrance to the annex from the main building. Representatives of the business, editorial and subscription departments will be on hand throughout the week . . . . . .

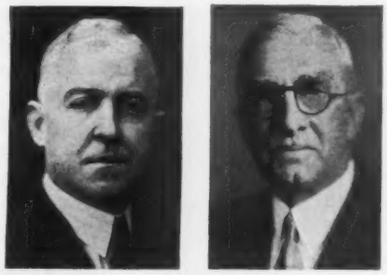
# American Association Convention at Augusta to be Important Event

THE 39th annual convention of the American Cotton Manufacturers Association will be held at the Bon Air Vanderbilt Hotel, Augusta, Ga., April 25, 26, and 27. The regular pre-convention meeting of the board of government will be held at a dinner session at the same place on Wednesday evening, April 24.

The important demands made on the Association's activities require a three-day convention this year rather than the usual two-day session. On Thursday morning, April 25, at 10:00 A. M., the regular session will open with an address by President William D. Anderson, followed by George A. Sloan, chairman of the code authority, and Goldthwaite H. Dorr, president of the Cotton-Textile Institute. Frank P. Douglas, member of the Textile Labor Relations Board, will speak on the subject of industrial relations in the cotton-textile industry. Secretary W. M. McLaurine's report will close the first session at 1:00 P. M.

On Thursday afternoon, various committees will meet to formulate plans and reports. Golf will be played at the various club courses in Augusta.

On Thursday evening, there will be an informal dinner for all guests followed by a fashion show, staged by Miss Katherine Cleveland, style expert of the New Uses Section of the Institute. These dresses will be modeled by a group of Augusta society girls, with the assistance of Mrs. C. L. Duvall of Augusta. Following the fashion show, there will be dancing and group parties.



Left to right, W. M. McLaurine, secretary, and W. D. Anderson, president, A.C.M.A. . . .

On Friday morning, April 26, at 10:00 A. M., the second session will stress merchandising. It has been termed a merchandising symposium. Saul F. Dribben, senior member of Cone Export & Commission Company, will speak on merchandising from the commission merchant's point of view. Mr. Dribben is recognized as one of the leading commission merchants in the country. David Oven, of Charlotte, N. C., president of the National Retail Dry Goods Association, will speak on merchandising cottons from the retailer's point of view. Mr. Ovens is a practical man and has made a national reputation for himself before his name was so prominent as president of the NRDGA. There will be speakers to represent the converters, the cutters-up, and finally, the symposium will close with an address by a national advertising man.

The keynote of the convention is merchandising, and this session will be packed with ideas from all sectors of the trade.

Friday afternoon there will be a meeting of those interested in publicity for the industry. R. V. Lawson, associate director of the Institute, and the state secretaries, policy committee of ACMA and publicity committees of ACMA are expected to attend and try to work out more effective plans for this work.

On Friday evening at 8:00 P. M., the banquet of the association will be held. There will be no speeches, but an unusual program for the benefit of the guests has been prepared. This program has been arranged under the special direction of President W. D. Anderson. Following the banquet and this program there will be dancing.

On Saturday morning the regular business session of the Association will be held, at which the various reports will be read, resolutions presented, new officers elected, and other business transacted.

L. S. Moody, secretary of the Augusta Chamber of Commerce, is selecting a committee to act with a committee of ladies selected by Mrs. C. L. Duvall, to act as official hosts for the city and to assist in entertaining the lady guests. An Augusta committee is arranging a two-day entertainment especially for the ladies who attend the convention. Augusta in April offers its visitors some of the most beautiful gardens in the South. Both the city's gardens and golf courses will be open unreservedly to the guests during the convention.

President Anderson and his committees have striven hard to arrange a convention combining both social and business features. The morning sessions are packed with information of the most valuable kind pertaining to the welfare and progress of the industry. The year has been tense and trying. The efforts that have been put forth exceed those of any year in the annals of the industry. President Anderson is particularly desirous of having every mill executive in the South attend this meeting, and expects it to be a great orientating conference to explain the efforts that have been tried out and to discuss some that must be enacted.

The association has been given the use of the entire hotel, which has a capacity of caring for more than 500 guests comfortably. Reservations for accommodations may be made directly with the hotel or through the office of W. M. McLaurine, secretary, American Cotton Manufacturers Association, First National Bank Bldg., Charlotte, N. C.

# Warp Breakage—A Study of Its Importance and Elimination

By Albert Palmer

Research Assistant to the General Manager,
Crompton & Knowles Loom Works

All weave rooms are confronted with the problem of increasing production and of improving quality. Its solution depends primarily upon the degree to which loom stoppage can be prevented. Every stop is a source of lost production and, in most instances, the cause for a defect in the fabric.

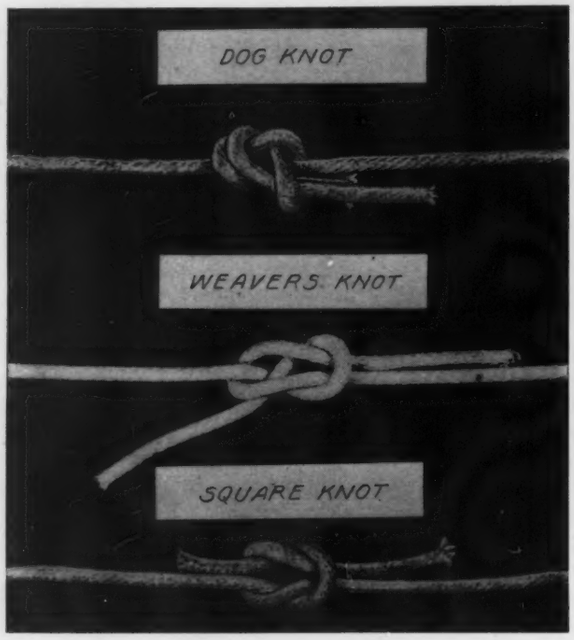
Mill men are all familiar with the reasons for loom stoppage, but only recently have they endeavored to determine the relative importance of the different kinds of stoppage. The studies that have been made indicate that in the average cotton mill approximately 85 per cent of the stoppage can be attributed to warp and filling difficulties. The results from a number of tests on automatic box looms, for example, showed that of the total stops, 45 per cent were because of warp breakage, 15 per cent because of breakage at the transfer of the bobbin, and 25 per cent because of filling breaks other than those at the time of transfer.

In terms of time spent by the weaver these items are more impressive than on the basis of the number of stops. Of the actual time devoted by the weaver to the manual operations involved in keeping his looms running, approximately 75 per cent is spent on warp breaks, 6 per cent on filling breaks at the transfer of the bobbin, and 13 per cent on filling breaks other than those at transfer. These figures point at once to the importance of warp breakage as an outstanding obstacle to high productive efficiency and high quality.

The analysis of the causes for warp breakage at the loom is somewhat difficult because, in the majority of instances, there is no conclusive evidence as to the reason for the warp break. There are, of course, many breaks to which an immediate cause can be assigned. Of these known causes, knots constitute the most serious difficulty. In the average mill they are responsible for about one-third of the warp breakage.

The reduction of warp breakage resulting from knots can be accomplished where attention is given to the type of knot used and to the methods that are employed in the making of the warps. Figure I shows the knots that are common in weaving. Of these, those used most frequently are *the weaver's knot, the square knot,* and the knot variously known as *the round, chicken's head, or spooler's knot.*

There are two variations of the weaver's knot which are in use. In the one shown in Figure 1 the tails come out on opposite sides of the knot. This knot is used by many weavers, particularly those whose training was of English origin. The other variation of the weaver's knot is the one shown in Figure 2, where the tails come out on the same side



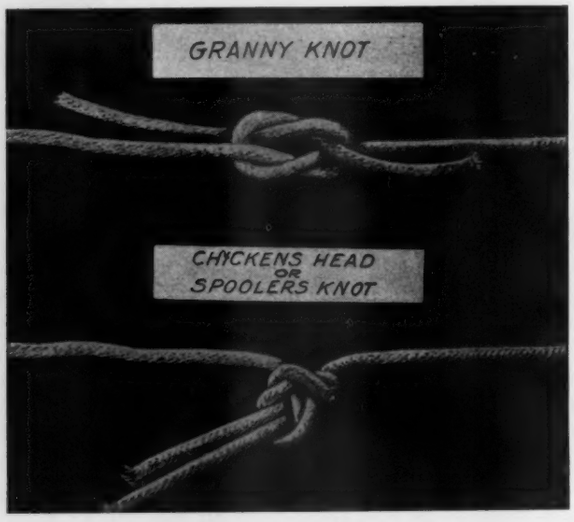




Fig. 1, above and left. Knots found in warps as a result of warp preparation and weaver's work. Note the weaver's knot shown in this figure has tails on opposite sides . . . . . .

of the knot. This knot also is used by weavers and is the type of knot that is tied by the automatic spooling machinery which is used in many mills.

The so-called dog knot is used by some weavers rather than a weaver's knot where the warp yarn is slippery. The claim is that this type of knot binds the tails in such a way that a knot will not slip. It is used by many silk weavers where they have trouble with the weaver's knot.

The square knot, as every mill man knows, is used by weavers where two ends of a broken thread must be tied together under tension. For instance, if the weaver is behind the loom and wants to tie two ends

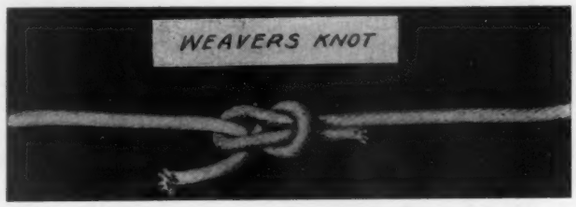



Fig. 2. The form of weaver's knot tied by machine. Many weavers use it in hand tying. Note the tails are on the same side of the knot . . . . . .

of a broken thread at the whip roll, he will use a square knot so that he will have tension in the repaired thread after the knot is tied.

The granny knot, as everybody knows, is an incorrectly tied square knot. It is practically useless, and is something that mill men try to avoid.

The round, or chicken's head knot, is used by woolen and worsted weavers. It, also, is used in the operation of spooling in cotton mills where the mill management does not insist that a weaver's knot be tried or where automatic spoolers are not used. From the standpoint of weaving this knot is very undesirable; first, because it is large, and second, because the tails of the knot usually lie at right angles to the thread. In Figure 3, for instance, is shown a section of reed through which pass two threads. The one on the left has a round, or chicken's head knot, and the one on the right a weaver's knot. As the picture shows, the tails of the round, or chicken's head, knot lie at right angles to the thread and therefore are a source of difficulty. Studies indicate that these tails usually result not only in breakage of the knotted warp ends but also of adjacent warp ends. Frequently the knot does more damage to the latter than to the knotted end itself.

The photograph shows that for the weaver's knot the space required is less and that the tails lie approximately parallel to the warp end itself, thus reducing the possibility of breakage in the case of the knotted end and adjacent ends.

As stated earlier in this paper, the reduction of warp breakage due to knots is primarily a question of eliminating as many knots as possible and of making all necessary knots weaver's knots.

To reduce the number of knots mills have changed their preparatory methods. Large package warp spinning, for example, has reduced the number of necessary knots introduced in the spooling operation. Long draft spinning has resulted in more uniform yarn, which in turn has reduced the number of knots caused by end breakage in the spooling, warping, and slashing processes. Improvements in the card room have had a similar effect.

In the warping of rayon the number of knots has been reduced by the use of much longer skeins than were formerly available and by the introduction of the type of creel in which large cones are used instead of spools. Where mills are using spools changes have been made in the method of doffing so that instead of having knots scattered throughout the warp they are either concentrated in restricted areas or are eliminated, depending upon the manner in which the warper is handled.

Some mills have trained their spooler tenders to tie weaver's knots. Some use hand knotters which tie weaver's knots, and some have put in automatic spooling so that all the knots involved in the spooling operation are weaver's knots. This has improved the condition of warp breakage by decreasing the number of occurrences by 25 per cent to 30 per cent.

To deal with the causes of warp breakage other than knots is a difficult problem. Some of the troubles can be traced immediately to weak places in the yarn or to slubs. In cotton warps in particular, however, the immediate reasons for stoppage are not evident because the clues left as the result of the breaks are few. In other words, to determine whether the

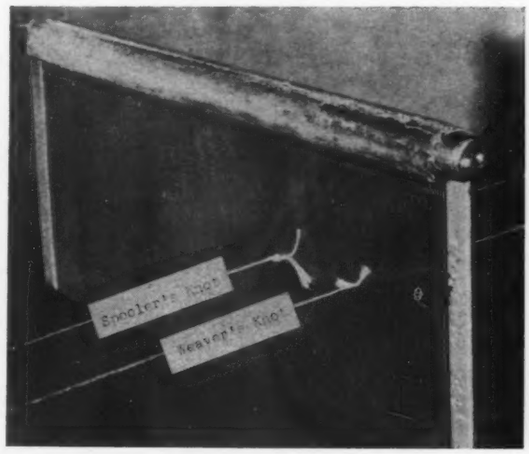



Fig. 3. A spooler's round knot and a weaver's knot at the reed. The tails of the former are about perpendicular to the axis of the warp end, while the tails of the latter are more parallel to it . . . .

difficulty arises through the yarn, the sizing, or the loom and its equipment is a troublesome question to decide.

Analytical studies of loom operation reveal a number of interesting facts which bear on this problem. Figure 4, for example, is the result of some observations that were made on automatic gingham and dobby dress goods looms. It is a chart showing the distribution of warp breaks from selvage to selvage in the fabric that was being woven. The conclusion to be drawn from it is that the warp breakage is concentrated along the selvages and decreases towards the center of the cloth. Studies of the location of warp breaks from the back to the front of the loom indicate another significant fact, namely that

the largest amount of warp breakage occurs in the harnesses and in the path of the reed. Observations on gingham and dress goods looms indicate that about 50 per cent of the breakage is in the harnesses and about 20 per cent in the path of the reed.

The explanation of these observations requires a study of the abuse to which the individual ends of the warp are subjected. Specifically, the study must relate to abrasion, flection, and tension.

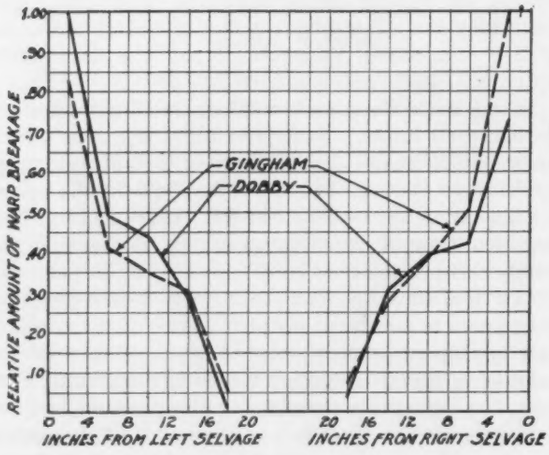



Fig. 4. Chart showing distribution of warp breakage in four-inch intervals from left and right selvages. Curves show average of obesrvations made on 112 automatic gingham looms during 705 running loom hours; and on 40 automatic dobby dress goods looms during 264 running loom hours.

The work that has been done to date indicates that of these items, abrasion and tension are the more important. The shuttle, the reed, and the harnesses are the primary contributors to the former difficulty. If they are at all rough, or if they are not timed correctly, they subject the warp to abrasion that is very detrimental to it, particularly near the selvages. To reduce this trouble loom manufacturers have devoted their attention to the design of the lay, shedding, and picking motions of looms, not only to give more shed at the time when the shuttle enters and leaves the shed, but also to keep the shuttle straight in its flight. The sweep of the lay has been increased in modern looms, as has been the dwell in harness cams. Better and more permanent means for maintaining the alignment of the lay have been devised. The shape of shuttle box binders has been studied to cause the shuttle to hug the reed and to prevent it from ploughing into the warp.

The auxiliary equipment, such as reeds and harnesses, also has been undergoing changes. The tendency now is to make the reeds wider between bars in order that the wires may be more flexible in the sidewise direction. The increased width also permits the reed to be dropped lower in the lay, thus placing the warp higher in the reed. In many looms, at the time of beat-up, the warp was very close to the bottom bar of the reed. This condition was not good because of the inflexibility of the reed near the bars.

The main causes for tension in warp threads are the actions of letting off, shedding, and beating up. Recent studies show that the normal warp tension introduced by the let-off is greatly increased by the opening of the harnesses and by the pressure of the reed against the fell of the cloth. Immediately after the harnesses cross, the tension in the warp begins to increase and continues until the shed is wide open. As the shed closes the tension drops until, at the point of crossing, it is back to approximately the original condition. There it stays until the instant of beat-up, when it rises rapidly to a point above the tension reached with the harnesses wide open. Some idea of the relative magnitude of the tension can be gained from an analysis which was made on a loom equipped with a rope friction let-off weaving a piece of chiffon. The tension at the crossing of the harnesses was one unit on the recording instrument, 7.8 units with the harnesses wide open, and 9 units at the time of beat-up. In other words, the tension was eight to nine times the tension at the time of the crossing of the harnesses.

The reason for the increase in tension as the harnesses open is obvious. In a loom where the distance from the fell of the cloth to the last lease rod or the whip roll is 32-inch and where the shed opening measured at the harnesses is 6-inch, the warp must be stretched 1.75 per cent if the friction let-off does not allow the beam to turn. This stretch is figured on the assumption that the harnesses are in

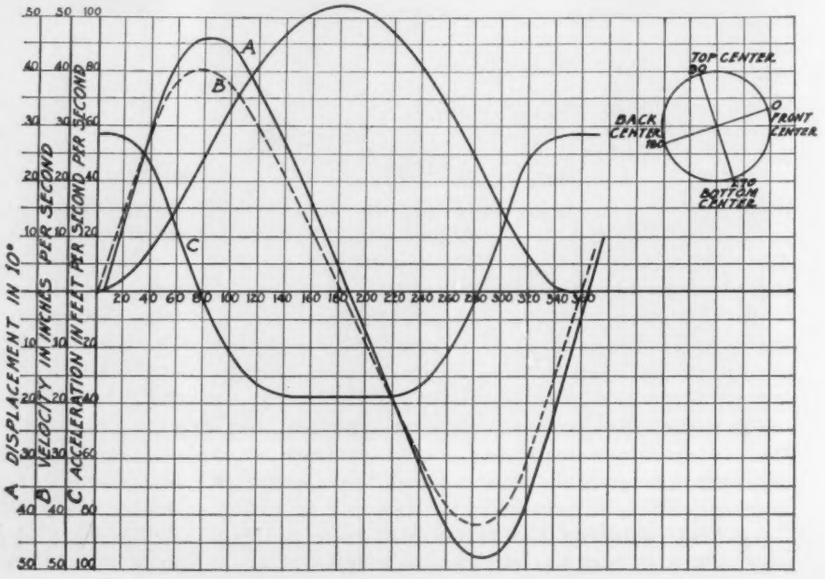



Fig. 5. Chart showing the velocity and acceleration of the lay at the reed line for one complete revolution of the crankshaft. Test made on automatic dobby loom running 145 p.p.m. . . . . .

the middle of the 32-inch distance from back to front; in other words, the individual warp end which was 32-inch long before the shed opened, becomes 32.56-inch when the shed is open, assuming that the beam does not let off any more yarn during the opening process.

The seriousness of warp tension with the harnesses open can be realized when consideration is given to the fact that each individual warp thread is being supported on the thin edge of a heddle eye. There is little wonder that with the old type of friction let-off most of the warp breakage occurs in the harnesses.

The tension at beat-up depends largely upon the construction of the loom, the speed at which it runs, and the position of the fell of the cloth.

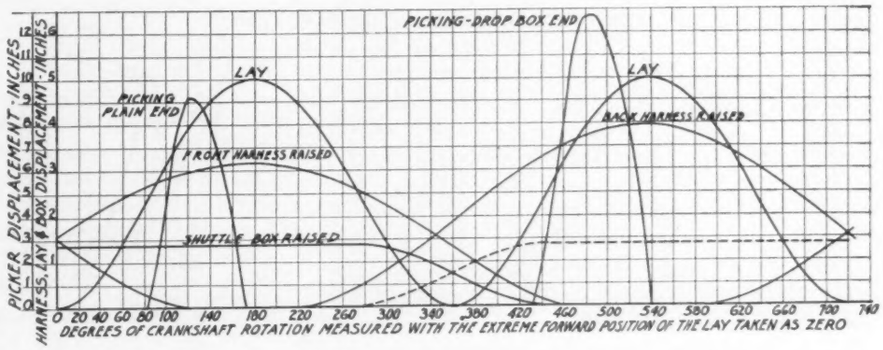
Figure 5 is a chart showing the velocity and acceleration curves of the lay of a Crompton & Knowles automatic dobby dress goods loom typical of those that are used in many mills. From this chart can be seen the fact that the lay velocity at exact front center is zero. Hence, if the fell of the cloth is at exact front center there is no increase in tension on the warp. Actually the condition never exists because in ordinary weaving the fell of the cloth comes in contact with the reed before the reed is at exact front center. The earlier the time of contact, the greater the velocity at which the reed is moving. For instance, in the case of the loom which was studied and charted in Fig. 5, the following situation existed:

| Distance of Point of Contact Between Fell of Cloth and Reed from Exact Front Center | Speed of Reed In Inches Per Second | Speed of Reed in Miles Per Hour |
|---|---|---|
| 0 | 0 | 0 |
| 1/16" | 13.3 | .756 |
| 1/8" | 16.5 | .938 |
| 3/16" | 19.0 | 1.080 |
| 1/4" | 20.7 | 1.176 |

These figures indicate that the increase in tension at the time of beat-up is the result of the impact of the reed against the fell of the cloth. If, for example, the fell of the cloth is ¼-inch from the exact front center position of the reed, the reed hits it at a velocity of 20.7-inch per second, giving it a jerk, the magnitude of which depends upon the rapidity with which the beam lets off. The weight of the beam and the amount of friction are involved in this problem.

After studying the matter of warp tension the question naturally arises as to how conditions can be bettered, particularly when the shed is open and the warp ends are being supported on the eye of the heddle. The best answer is to use a let-off such as the automatic let-off. One such let-off is designed to allow the beam to roll forward when the shed is open, thus minimizing the great increase in tension that exists where a rope friction let-off is used. This automatic let-off has the further advantage of letting off uniformly and of providing uniform tension in the warp at the time of beat-up.

To leave this subject without mentioning the importance of warp sizing would be a serious error. Mechanical studies can reduce warp breakage to a certain extent but the control of warp sizing is of the utmost importance. By proper treatment the warp can be made more resistant to abrasion and to sudden increases in tension. Individual mills have recognized the importance of this work by improving sizing compounds and sizing methods. In addition, concerted effort is being planned by the United States Institute for Textile Research to the end that better warp preparation will supplement the scientific investigation which is being carried on by machinery manufacturers as a means for reducing the amount of stoppage due to warp breaks in loom operation.


PICKER DISPLACEMENT-INCHES
HARNESS, LAY & BOX DISPLACEMENT-INCHES
PICKING-DROP BOX END
LAY
PICKING PLAIN END
FRONT HARNESS RAISED
LAY
BACK HARNESS RAISED
SHUTTLE BOX RAISED
0 20 40 60 80 100 140 180 220 260 300 340 380 420 460 500 540 580 620 660 700 740
DEGREES OF CRANKSHAFT ROTATION MEASURED WITH THE EXTREME FORWARD POSITION OF THE LAY TAKEN AS ZERO

Typical timing diagram of a Crompton & Knowles loom, showing the relation between lay, box, and harness movement. These settings were used for a slow motion picture analysis of a 54-inch, 2x1 box dobby loom . . .

## "Destructive Forces"—Why, Mr. Green!

"Pudgy William Green, president of the American Federation of Labor, was speaking before the Town Hall Forum in Washington, and was having a hard time. The panel of hecklers, particularly bearded James A. Emery, lobbyist of the National Association of Manufacturers, was putting Green over the jumps. Finally Green protested plaintively: 'If the capitalists do not deal with labor they will have to deal with some *other* destructive force.'

"The huge crowd roared with laughter."

* * *

We reproduce the above report from the famous syndicated column, "Washington Merry-go-round", by Drew Pearson and Robert S. Allen, through courtesy of the United Feature Syndicate, who distribute it, and the Atlanta Journal, in whose columns it appeared on March 10, as one of a large number of newspapers utilizing this regular feature. The italics are ours.

# Correct Tension on Spinning Bands

By H. H. Willis

UNIFORMITY of tension is an important factor in tying bands on a spinning frame—important from the standpoint of the quality of yarn spun, the life of the bands and the power consumed. It is not possible, however, to tie on bands uniformly by hand. The purpose of this article is to describe and discuss an instrument known as the Correct-Control banding device, by use of which spinning bands may be tied on uniformly with any desired tension. Tests have indicated that the tension of the bands tied on with this equipment varied from spindle to spindle not more than one and one-half pounds, whereas the tension of the same bands tied on by hand by a skilled operator varied from two to ten pounds.

The manufacturer of this banding device claims that it saves power, increases the life of bands and gives a better yarn. It is believed that cotton manufacturers will be interested in the results of a thorough test of this equipment. The author has tested this equipment and sets forth in this article the findings of the test.

### Operation of the Device

A drawing of the device is shown in Figure 1, with the number and name of each of the main parts. In tying on a band, the operator places the yoke wier (15) on the spindle bolster casing and pushes the instrument forward until the clip wires (8) engage in the spindle whorl. He then places the band around the cylinder, splits the band into two strands, passing one end up through the loop and the other down through the loop. Up to this point the operation is the same as that of hand tying of bands. Before drawing up the band, the operator puts it around the lever hook (11) and pulls the two ends through the doffer bowls (13). The band and equipment are then in the positions as shown in Figure 2. The operator then applies sufficient pull on the two ends of the bands to move the lever forward until it is locked by latch (7). For this position of the band and

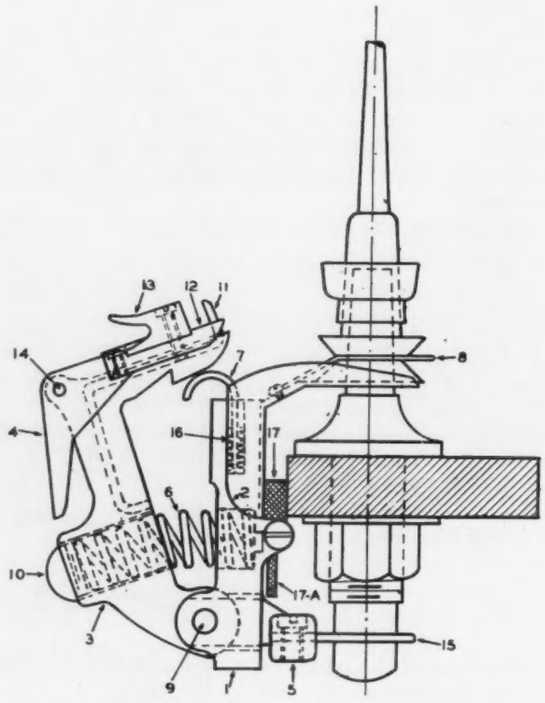



FIG. 1

**Numbered Parts of Correct-Control Banding Device Shown in Figure 1.**

No. 1, Frame; 2, Top Plate; 3, Lever; 4, Doffer; 5, Yoke; 6, Tension Spring; 7, Latch; 8, Clip Wires; 9, Lever Pin; 10, Lever Plug; 11, Lever Hook; 12, Doffer Plate; 13, Doffer Bowls; 14, Doffer Pin; 15, Yoke Wire; 16, Small Latch Springs in Frame; 17, Adapter (in use); and 17-a, Adapter (not in use).

Fig. 2. Showing banding device after the strands have been passed through the loop and are ready to be drawn up . . . . . .

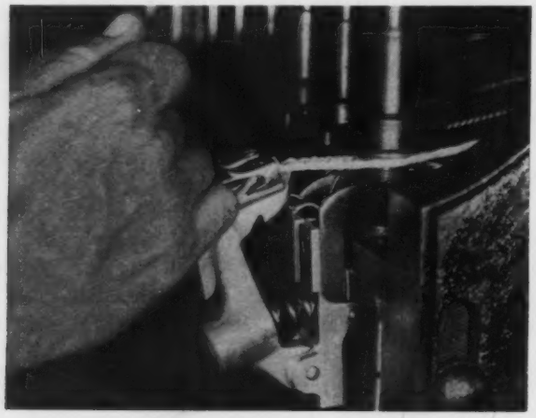
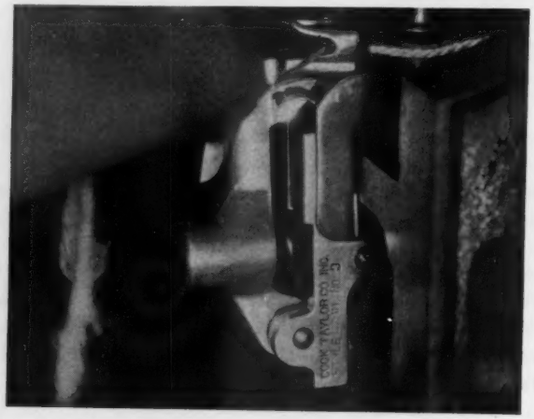


Fig. 3. Showing position of the device after sufficient pull has been placed on the strands to lock the banding device. The knot is now ready to be tied as shown in Figs. 4, 5 and 6 . . . . . .



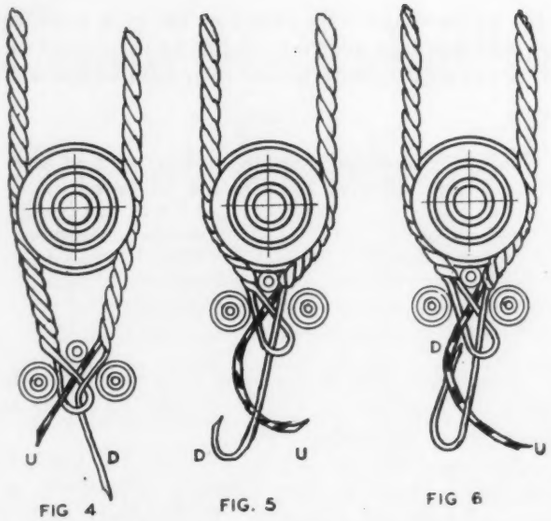



FIG 4 FIG. 5 FIG 6

### How to Tie on Single Square Knots

There are various knots used in tying on bands, such as the split knot, chicken head knot, square knot, and others. The larger the knot used, the less satisfactorily the band will run. The smallest knot is called the square knot and is illustrated in Figs. 4, 5 and 6. This single knot when tied as indicated will not slip . . . . . .

*Legend for Fig. 4.* Proceed with tying on the band in the usual manner by passing strand U up through the loop and to the left as shown. Pass the other strand D down through the loop to the right. Hold strands separate in their relative positions while placing the loop behind the lever hook as indicated by the small circle. The strands of the band are then pulled evenly as near to the rail as possible until the device is closed as indicated in Fig. 5.

*Legend for Fig. 5.* Transfer strand U to the right hand and strand D to the left hand. In so doing strand U should pass under strand D. Then pull both strands with the same tension so as to lock the loop and even the strands. If this transfer of strands is not made, strand D will be in an awkward position to pass around strand U and is likely to be so unevenly tensioned as to cause the band to come off in a short time.

*Legend for Fig. 6.* Next pull both strands tight after the transfer, which will bring the half knot to the center of the loop. To finish, strand D is then passed up under strand U as shown. The knot has now been completed, after which the strands should be cut at least ⅛-inch behind the doffing lever of the device.

equipment, see Figure 3. After the latch (7) engages, any extra pull which the operator may place on the band does not affect the final tension on the band as the lever (3) automatically returns to its correct position as soon as the extra pull has been released. This operation stretches the band in that a pull of about twenty to fifty pounds is required to lock the device. By adjusting tension spring (6) this pull may be set at any desired amount, depending upon the kind of band used. Approximately six pound tension on the tied band is recommended.

It is interesting to note that in tying on bands by hand the pull on the band by the operator is all against the spindle which tends to throw the spindles out of plumb, whereas when this device is used, the pressure is against the spindle rail. (See adapter—No. 17 in Figure 1.)

When the band has been tied on (as explained in Figures 4, 5 and 6), the operator presses on the doffer (4) which removes the band from the lever hook (11) and permits the band to fall into the spindle whorl. He next pushes lever (3) slightly forward and presses on latch (7) to release the lever (3). He then pulls the device towards himself until the clip wires (8) disengage, drops the device about an inch until the yoke wire (15) is free, and proceeds to the next spindle.

### Power Used

Any bander knows that the spinning belt frequently will not start the frame which has been rebanded while the cylinder was not in motion. However, the belt will easily pull the same frame if banded with this banding device when the cylinder is not in motion. This alone illustrates clearly the difference in band tension as between mechanical and hand banding.

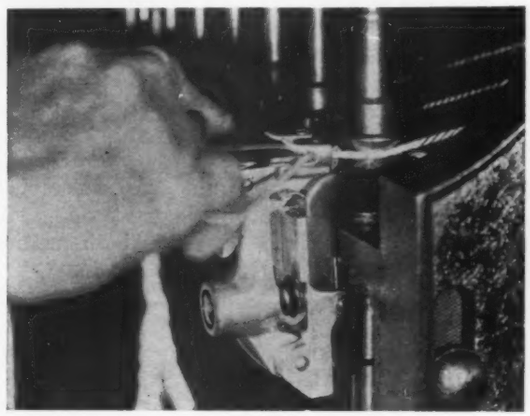


Fig. 7. Showing a band which was split too far before being tied. In tying on a band with this device, the twist in the band on the split side should be kept normal. Note that the twist on the right side of the split band is less than that throughout the band. A band split too far will not run as long as one which has been split properly . . . .

The 76 spindles of the 80-spindle frame used in this test were banded by hand and run for four hours before the hand banding test was made. While this test was being run, the power consumption for the frame was checked every five minutes during the first hour of the doff and every ten minutes during the second hour of the doff. At the end of the doff the bands were cut off and the same frame rebanded by the use of the banding device. The frame as above was then run for four hours before making the test in which the band device was used. Checks were made as above.

The 76 spindles run by bands tied on by hand consumed 21 per cent more power than the same 76 spindles run by bands tied on by the banding device.[1] Of course this saving in power depends upon the amount of tension on the bands. It is possible to tie on bands by hand with a tension that would probably consume but little power per spindle. However, if the bands are tied on slack by hand, they will not run in the spindle whorls or will make soft yarn.

There is no doubt that considerable power can be saved by using this device. The writer knows of

[1]See COTTON, October, 1921, page 933, for results of banding test, which indicate a similar saving in power.

a mill that was having considerable trouble with its group drive motors heating to excess. As soon as the frames driven by these motors were banded with this device, the motors no longer heated appreciably.

### Band Saving

When bands have been tied on by hand with the usual amount of tension, any appreciable change in relative humidity due to weather conditions causes the bands to contract and frequently to break off. By the use of the banding device the bands are prestretched a given amount. When the bands have been prestretched and are tied on with approximately a 6-pound pressure, they are less likely to break under a considerable change in relative humidity.

### Yarn Strength

Two different varieties of cotton were used in this test, Lot No. 1 being run on the east side of the frame and Lot No. 2 on the west side of the frame. Each variety was tested by both methods. Nine hundred and sixty skeins of 28s yarn were tested—two hundred and forty skeins of yarn from each lot of the two banding tests. (For results, see Table 1.)

**Table 1. Average strength of two hundred and forty skeins of 28s yarn per lot tested.**

| Tied on by: | Lot No. 1 Pounds | Lot No. 2 Pounds |
|---|---|---|
| Band device | 59.6 | 58.0 |
| Hand | 59.1 | 56.5 |
| Difference | .5 | 1.5 |

Apparently the increase in yarn strength when using the band device will vary with the staple and character of the cotton used.

To summarize, these tests indicate that the banding device improves yarn strength and effects savings in bands and in power. Furthermore, it is responsible for fewer stoppages, and thus lightens the task of the operative.

---

### George Sloan Forms Merchandising Firm

George A. Sloan, former president of the Cotton-Textile Institute, Inc., announced on March 8 the formation of a new textile merchandising firm to be known as the George A. Sloan & Company, Inc. The firm will engage in the distribution of products of American textile mills in domestic and foreign markets.

The new company will be located at 34 Thomas Street, New York City, and will begin business at once. Branch offices will be located in Philadelphia, Baltimore, Boston, Detroit, Chicago and San Francisco.

Mr. Sloan also announced that his firm will serve as the exclusive sales representative of the Amoskeag Mfg. Company, Manchester, N. H., the country's largest manufacturers of cotton and worsted fabrics, and the Suncook Mills, of Suncook, N. H., manufacturers of rayon and cotton fabrics. Negotiations are under way with other textile mills now distributing their own products with a view to making the new firm a national institution covering all sections and branches of the industry.

In commenting upon his new undertaking, Mr. Sloan stated:

"Having devoted the past eight years very largely to problems related to the manufacture of cotton textiles, I am glad to have this opportunity to give more time to the subject of distribution. Besides, I am happy to throw my lot with the many fine men engaged in this division of the textile business and will look forward to close co-operation with them in their efforts to further the best interests of the industry and general recovery."

Mr. Sloan is president of the new firm and D. W. Jarvis, former selling agent for the Amoskeag Company, is chairman of the board.

* * *

### Dorr Comments on F. T. C. Report

G. H. Dorr, President of the Cotton-Textile Institute, commenting on the report of the Federal Trade Commission's study of investments, earnings and rates of return of 409 companies in the spinning, weaving and finishing divisions of the cotton textile industry, issued the following statement:

"The report of the Federal Trade Commission made public today serves to emphasize again the distressing plight of the cotton textile industry.

"With increased labor costs, losses in both export and domestic markets to low-cost foreign competition and the heavy processing tax, the industry which made some profits in 1933 and in the first half of 1934 chiefly as the result of appreciation of inventories, has, since July of that year, been operating in the red.

"Today's report covers the financial status of 409 companies engaged in the spinning, weaving and finishing of cotton yarns and fabrics, showing these companies to have lost money in July and August, 1934, at rates of from .17 per cent annually for weaving and spinning companies to 8.57 per cent annually for dyeing and finishing companies. That record is typical of the industry as a whole and unhappily, as we believe will be shown by further studies of the Commission now under way, losses continued during the last half of the year while operations during the first two months of 1935 were even more discouraging.

"The Commission made no attempt, and it probably is impossible to determine the proportion of profits in 1933 and the first six months of 1934 due to enhancement of inventories. Any statements of profits in that period should be read in the light of the staggering losses sustained by the industry annually between 1926 and 1932 amounting in the aggregate to more than $100,000,000—losses only partially recouped by the profits shown in the Commission's studies. Such a statement of profits should likewise be read in the light of increased demands for working capital as a result of greatly increased wage costs, doubling of the price of raw cotton and the processing tax.

"The report shows that in July and August, 1934—months immediately preceding the textile strike—a decrease of only 1 hour per week in hours worked would have resulted in a loss of $1,561,708 to the 206 cotton spinning and weaving companies studied, and that if hours worked had been reduced by 10 hours or to 30 hours per week instead of the prevailing Code 40-hour maximum, the resulting increased labor costs would have necessitated an increase of 8.75 per cent in prices to the consumer in order that the manufacturers might barely "break even" without any margin at all for payment of interest on borrowed capital or for return on investment."

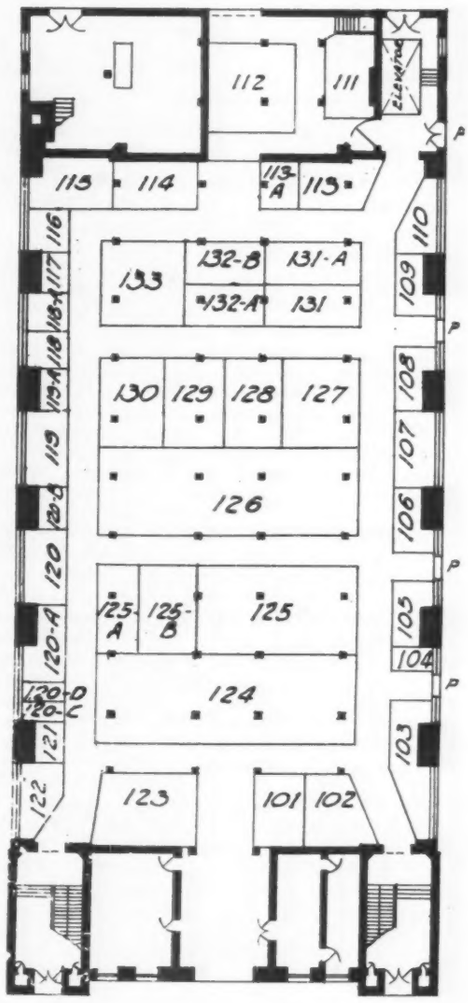
# Guide to Exhibitors and Representatives at Southern Textile Exposition

IN THIS section will be found a complete list of the exhibitors at the Eleventh Southern Textile Exposition in Greenville, April 8 to 13 inclusive—showing the address of the company, the booth number, the name of each representative and the hotel or other address at which he is staying during the show.

This feature was inaugurated in our Show Issue in connection with the 1932 Exposition, and its popularity warrants its repetition at this time.

This guide will be of great convenience to both exhibitors and mill men. The location of the booths may be determined by reference to the floor diagrams shown herewith. All exhibits numbered from 1 to 199 are located on the first floor of the main building; those from 200 to 299 are on the second floor of the main building; those from 400 to 478 are in the Permanent Annex adjoining the first floor of Textile Hall; and those from 479 to 485 are in the Temporary Annex.

The name of the hotel or other residence address of each representative will be found opposite his name in the listing. Where no information appears concerning representatives this was not furnished to us by the exhibitor.




FIRST FLOOR, MAIN BUILDING

Housing Exhibits from No. 101 to 199.

**ABBOTT MACHINE CO.** — **Booth No. 212-213**
**Wilton, N. H.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| W. G. Abbott, Jr., V-P. and Gen. Mgr. | Poinsett |
| L. S. Ligon, Southern Rep. | Residence |
| W. L. Perry, Chief Engineer | Poinsett |
| Roger E. Hopkins, Service | ——— |
| Bert Ziegler, Service | ——— |

**ADOLFF BOBBIN CO., Inc.** — **Booth No. 133**
**Kearny, N. J.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| C. F. Dulken, Vice-Pres. | Ottaray |
| W. E. Mayer, Asst. Treas. | Ottaray |
| H. E. Kresse, Sales Mgr. | Ottaray |

**ALDRICH MACHINE WORKS** — **Booth No. 250**
**Greenwood, S. C.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| A. P. Aldrich, Jr., Sales Mgr. | Imperial |
| Robert Aldrich, Plant Mgr. | Imperial |
| Roy Perry, N. C. Rep. | Imperial |
| I. W. Dixon, Chief Installer | Anderson, S. C. |

**ALLIS-CHALMERS MFG. CO.** — **Booth No. 132-B**
**Milwaukee, Wis.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Wm. Parker, Charlotte Mgr. | Poinsett |
| Berrian Moore, Atlanta Mgr. | Poinsett |
| Harry S. Roberts, Sales Eng. | Poinsett |
| A. I. Richardson, Sales Eng. | Poinsett |

**AMERICAN BEMBERG CORP.** — **Booth No. 416-417**
**261 5th Ave., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| W. Schlie, Sales Mgr. | Poinsett |
| C. Chester Bassett, Sou. Rep. | Poinsett |
| John Sherrill, Sou. Rep. | Poinsett |
| Mrs. Louis Huston, Educ. Dir. | Poinsett |
| H. Z. Heuston, Asst. to Mrs. Huston | Poinsett |

**AMERICAN CYANAMID & CHEMICAL CORP.** — **Booth No. 484**
**30 Rockefeller Plaza, N. Y. C.** — **Temp. Annex**

| | |
|---|---|
| Paul F. Haddock, Mgr., Sou. District | Poinsett |
| C. B. Suttle, Jr. | Poinsett |
| Harry Rose | Poinsett |
| M. J. Wixson | Poinsett |

**AMERICAN ENKA CORP.** — **Booth No. 402-404**
**Enka, N. C.** — **Perm. Annex**

| | |
|---|---|
| C. Vanderhooven, Secretary | Poinsett |
| R. J. Mebane, Sou. Rep. | Poinsett |
| R. R. Faison, Asst. Sou. Rep. | Poinsett |
| C. R. Hall, Weaving Technician | Poinsett |
| H. B. Carico, Knitting Technician | Poinsett |

**AMERICAN MOISTENING CO.** — **Booth No. 125-A**
**Providence, R. I.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| F. J. Orme, Gen. Mgr. | Poinsett |
| J. D. Johnson, Sales Eng. | Poinsett |
| W. L. Johnson, Sales Eng. | Poinsett |
| W. L. Burgess, Sales Eng. | Poinsett |
| Marvin McCall, Sales Eng. | Poinsett |

**AMERICAN PULLEY CO.** — **Booth No. 225-BX**
**Philadelphia, Pa.** — **2nd Fl. Main Bldg.**

**AMERICAN WOOL & COTTON REPORTER** — **Booth No. 211**
**Boston, Mass.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| C. Randolph Bennett, Bus. Mgr. | Imperial |
| James A. Greer, Sou. Mgr. | Residence |
| A. A. Underwood, Vice-Pres. | Imperial |

**APPLETON ELECTRIC CO.** — **Booth No. 459**
**Chicago, Ill.** — **Perm. Annex**

| | |
|---|---|
| Frank C. Lewis, District Rep. | ——— |
| W. H. Jennings, Salesman | ——— |

**ARMSTRONG CORK PRODUCTS CO.** — **Booth No. 131**
**Lancaster, Pa.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| W. B. Tucker, Gen. Mgr. | Poinsett |
| T. L. Hill, Mgr. Sou. Office | Residence |
| D. T. Starkey, N. E. Mgr. | Poinsett |
| J. V. Ashley, Salesman | Poinsett |
| L. C. Bayless, Salesman | Poinsett |
| H. H. Jordan, Salesman | Poinsett |
| D. F. Sweeny, Salesman | Poinsett |
| J. H. Hayes, Salesman | Poinsett |
| F. G. Richards, Jr., Salesman | Residence |

**ARMSTRONG MACHINE WORKS** — **Booth No. 120-B**
**Three Rivers, Mich.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| O. E. Ulrich, Factory Rep. | ——— |

**ARNOLD, HOFFMAN & CO., INC.** — **Booth No. 414**
**Providence, R. I.** — **Perm. Annex**

| | |
|---|---|
| Edward M. Johnson, V-P. & Treas. | Poinsett |
| Frank W. Johnson, Sou. Mgr. | Poinsett |
| R. E. Buck, Jr., Salesman | Poinsett |
| Harold T. Buck, Salesman | Poinsett |
| P. Dupre Johnson, Salesman | Poinsett |
| W. Chester Cobb, Salesman | Poinsett |

**ASHWORTH BROS., INC.** — **Booth No. 119**
**Charlotte, N. C.** — **1st Fl. Main Bldg.**

**ATLANTA BRUSH CO.** — **Booth No. 409-410**
**Atlanta, Ga.** — **Perm. Annex**

| | |
|---|---|
| T. C. Perkins, Pres. | Imperial |
| Howard R. Cook, Vice-Pres. | Imperial |
| George B. Snow, Special Rep. | Imperial |
| Wm. C. Perkins, Special Rep. | Imperial |

**BAHAN TEXTILE MACHINERY CO.** — **Booth No. 125-C**
**Greenville, S. C.** — **1st Fl. Main Bldg.**

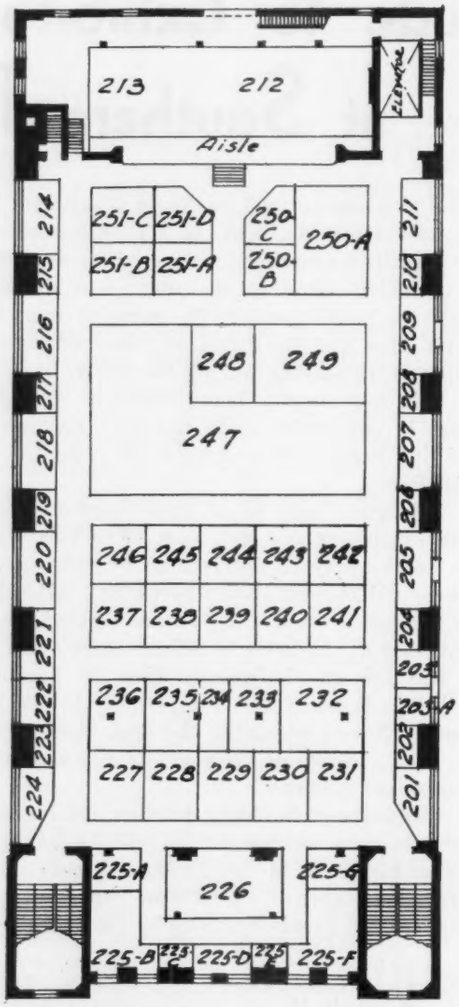
| | |
|---|---|
| Wm. H. Bahan, Pres. and Treas. | Residence |
| Edward Bahan | Residence |
| G. E. McMinn, Salesman | Residence |
| N. M. Neal, Salesman | Residence |
| J. C. Williamson, Salesman | Residence |
| Paul Bahan, Salesman | Residence |

**BAHNSON COMPANY** — **Booth No. 216-218**
**Winston-Salem, N. C.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| A. H. Bahnson, Pres. | Poinsett |
| F. F. Bahnson, Chief Eng. | Poinsett |
| S. C. Stimson, Sales Rep. | Poinsett |
| I. L. Brown, Sales Rep. | Poinsett |
| Arvin Page, Asst. Chief Eng. | Poinsett |

**BARBER-COLMAN COMPANY** — **Booth No. 247-248**
**Rockford, Ill.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| J. H. Spencer, Sou. Mgr. | Residence |
| N. H. Alford. Asst. Sou. Mgr. | Residence |




SECOND FLOOR, MAIN BUILDING
Housing Exhibits from No. 200 to 299

| | |
|---|---|
| S. R. McElroy, Installation Supt. | Residence |
| B. A. Peterson, Director of Sales | Poinsett |
| R. E. McCausland, Field Mgr. | Poinsett |
| R. G. Ross, Field Supt. | Poinsett |
| F. D. Taylor, Sales Eng. | Poinsett |
| C. J. Braatz, Sales Eng. | Poinsett |
| W. B. Anderson, Framingham Mgr. | Poinsett |

**BARRETT-CRAVENS CO.** — **Booth No. 250-B**
**3255 West 30th St., Chicago, Ill.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| E. J. Heimer, Vice-Pres. | H. M. Perry Residence |

**BELGER COMPANY** — **Booth No. 225-A**
**Watertown, Mass.** — **2nd Fl. Main Bldg.**

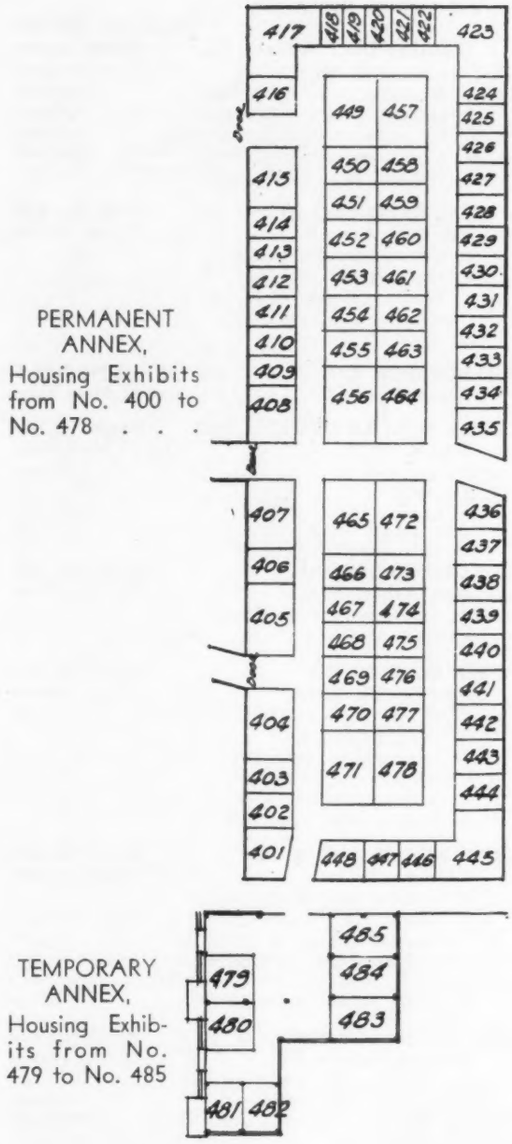
| | |
|---|---|
| O. A. Belger | ——— |
| Fay H. Martin | ——— |
| J. A. Butler, Sou. Rep. | ——— |

**BLACKMER PUMP CO.** — **Booth No. 219**
**Grand Rapids, Mich.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| B. P. Heller, Sales Mgr. | Wayside Inn (Greer) |
| W. S. Murphey, Dis. Rep. | Wayside Inn (Greer) |

**CHARLES BOND CO.** — **Booth No. 480**
**Philadelphia, Pa.** — **Temp. Annex**

| | |
|---|---|
| C. Carter Bond, Vice-Pres. | ——— |
| Harold C. Smith, Salesman | Residence |
| John C. Turner, Salesman | ——— |




**BORNE, SCRYMSER CO.** — **Booth No. 464**
**17 Battery Pl., New York City** — **Perm. Annex**

| | |
|---|---|
| Philip C. Meon, Treas. | Ottaray |
| Hughes L. Siever, Tech. Sales Mgr. | Ottaray |
| William B. Uhler, Salesman | Ottaray |
| Russell C. Young, Salesman | Ottaray |

**BOWEN-HUNTER BOBBIN CO.** — **Booth No. 249**
**East Corinth, Vt.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| E. M. Bowen, Pres. | Poinsett |
| H. G. Hunter, Treas. | Poinsett |

**BRISTOL COMPANY** — **Booth No. 476**
**Waterbury, Conn.** — **Perm. Annex**

| | |
|---|---|
| G. H. Gaites, Phila. Mgr. | ——— |
| F. W. Borchers, Birmingham Mgr. | ——— |
| J. L. Williams, Boston Mgr. | ——— |
| F. A. Faust, Sales Eng. | ——— |

**E. L. BRUCE CO. (Terminix Div.)** — **Booth No. 483-A**
**Memphis, Tenn.** — **Temp. Annex**

| | |
|---|---|
| George Hyatt | ——— |
| W. H. Sullivan | ——— |
| E. L. Fellman | ——— |

**BRUGGER WINDING CO.** — **Booth No. 233**
**41 E. Gowen Ave., Philadelphia, Pa.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Albert H. Bruegger | 101 E. Washington St. |
| W. A. Dobler | 106 Butler St. |

**B. H. BUNN CO.** — **Booth No. 466**
**7605 Vincennes Ave., Chicago, Ill.** — **Perm. Annex**

| | |
|---|---|
| H. E. Bunn, Vice-Pres. | 411 E. Washington St. |

**H. W. BUTTERWORTH & SONS CO.** — **Booth No. 120-A**
**Philadelphia, Pa.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| J. Ebert Butterworth, Vice-Pres. | c/o Harold C. Smith |
| J. Hillman Zahn, Sou. Mgr. | c/o Harold C. Smith |
| Robert Hartmann, Asst. Shop Mgr. | c/o Harold C. Smith |

**CALLAWAY MILLS** — **Booth No. 448**
**LaGrange, Ga.** — **Perm. Annex**

| | |
|---|---|
| M. M. Trotter, Vice-Pres. | Poinsett/Imperial |
| P. N. Collier, Staff Mgr. | Poinsett/Imperial |
| T. L. Arnett, Tech. Supt. | Poinsett/Imperial |
| W. C. Cureton, Jr., Supt. Maintenance | Poinsett/Imperial |
| W. P. Dunson, Supt., Valway Rug plant | Poinsett/Imperial |
| F. L. Asbury, Jr., Supt., Hillside plant | Poinsett/Imperial |
| T. B. Kersey, Supt., Oakleaf and Unity Spin. | Poinsett/Imperial |
| B. W. Robinson, Supt., Elm City | Poinsett/Imperial |
| C. Y. Hall, Jr., Supt., Unity plant | Poinsett/Imperial |
| J. H. Daughdrill, Supt., Calumet LaGrange | Poinsett/Imperial |
| W. A. Reeves, Jr., Supt., Truline plant | Poinsett/Imperial |
| D. G. Reid, Supt., Hogansville plant | Poinsett/Imperial |
| James Newsom, Supt., Milstead plant | Poinsett/Imperial |
| V. J. Thompson, Supt., Manchester plant | Poinsett/Imperial |
| C. J. Jones, Jr., Rockweave sales | Poinsett/Imperial |

**CHARLOTTE MFG. CO.** — **Booth No. 101**
**Charlotte, N. C.** — **1st Fl. Main Bldg.**

**CLINTON COMPANY** — **Booth No. 205-206**
**Clinton, Iowa** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| George E. Corson, Mgr. Bulk Sales | Poinsett |
| Luther Knowles, Sr., Sou. Rep. | Poinsett |
| Luther Knowles, Jr., Sou. Rep. | Poinsett |
| Byrd Miller, Sou. Rep. | Residence |
| C. D. Kelly, Supt. Starch plant | Poinsett |

**CLIPPER BELT LACER CO.** — **Booth No. 221**
**Grand Rapids, Mich.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Perry J. Edwards, Factory Rep. | Imperial/Poinsett |
| Wylie K. Lee, Pres. | Imperial/Poinsett |

**CONTINENTAL-DIAMOND FIBRE CO.** — **Booth No. 105**
**Newark, Del.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| N. N. Wright, Vice-Pres. | Poinsett |
| C. L. Simmons, Sou. Mgr. | Poinsett |

**CORN PRODUCTS SALES CORP.** — **Booth No. 457**
**New York City** — **Perm. Annex**

| | |
|---|---|
| Curry Watson, Mgr. Textile Div. | ——— |
| Wm. F. Mueller, Asst. Mgr. | ——— |
| R. H. DeWaters, Research Dept. | ——— |
| Norris Rabold, Research Dept. | ——— |
| John R. White, Sou. Mgr. | Residence |
| J. C. Alexander | ——— |
| C. G. Stover | Residence |
| W. R. Joyner | Residence |
| L. H. Kelly | ——— |

**COTTON** — **Booth No. 408**
**Atlanta, Ga.** — **Perm. Annex**

| | |
|---|---|
| W. R. C. Smith, Pres. | Poinsett |
| W. J. Rooke, Vice-Pres. | Poinsett |
| Richard P. Smith, Asst. to V-P. | Ottaray |
| Robert W. Philip, Editor | Ottaray |
| W. A. McGee, Sou. Mgr. | Ottaray |
| John C. Cook, Western Mgr. | Ottaray |
| N. J. Phelan, Sub. Rep. | 12 E. Stone Ave. |

**DANA S. COURTNEY CO.** — **Booth No. 249**
**Chicopee, Mass.** — **2nd Fl. Main Bldg.**

**CRANE COMPANY** — **Booth No. 462-463**
**Chicago, Ill.** — **Perm. Annex**

| | |
|---|---|
| W. F. Lahl, Asst. Mgr. Spec. Sales | _____ |
| P. F. Sackett, Mgr. G'ville | Residence |

**CROCKER-WHEELER ELECTRIC MFG. CO.** — **Booth No. 120-CX**
**Ampere, N. J.** — **1st Fl. Main Bldg.**

**CROMPTON & KNOWLES LOOM WORKS,** — **Booth No. 126**
**Worcester, Mass.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| S. B. Alexander, Sou. Mgr. | Poinsett |
| J. C. Irvin | Poinsett |
| R. M. Deal | Poinsett |
| S. P. V. Desmond | Poinsett |
| Irving H. Verry, V-P. and Sales Mgr. | Poinsett |
| Rufus S. Frost, Asst. Sales Mgr. | Poinsett |
| Fred W. Howe, Jr., New York Rep. | Poinsett |

**CROUSE-HINDS CO.** — **Booth No. 471**
**Syracuse, N. Y.** — **Perm. Annex**

| | |
|---|---|
| C. A. Hausman | Poinsett |
| H. L. Guiney | Poinsett |
| F. C. Smith | Poinsett |

**CURTIN-HOWE CORP.** — **Booth No. 121**
**Chattanooga, Tenn.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| W. E. Norvell, Sou. Mgr. | _____ |
| H. J. Lucey, Vice-Pres. | _____ |

**CURTIS & MARBLE MACHINE CO.** — **Booth No. 239-240**
**Worcester, Mass.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Charles F. Marble, Treas. | Poinsett |
| Fred C. Bryant, Rep. | Poinsett |
| Frank McKay, Rep. | Poinsett |
| W. F. Woodward, Sou. Rep. | Residence |

**DENMAN TIRE & RUBBER CO.** — **Booth No. 101**
**Warren, Ohio** — **1st Fl. Main Bldg.**

(Terrell Machine Co. Reps.) _____

**DETROIT STOKER CO.** — **Booth No. 241**
**Detroit, Mich.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| W. W. Moore, Dis. Mgr. | 621 N. Main St. |

**DIEHL MFG. CO.** — **Booth No. 230**
**Elizabethport, N. J.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| F. B. Williams, Jr., V-P and Sales Mgr | Poinsett |
| P. N. Thorpe, Tex. Div. Mgr. | Poinsett |
| H. B. Thorpe, Distributor | Poinsett |
| S. G. Boyd, Mgr. Atl. Office | Poinsett |
| R. D. Ingalls, Asst. Chief Eng. | Poinsett |

**DRAPER CORPORATION** — **Booth No. 124**
**Hopedale, Mass.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| B. H. Bristow Draper, Pres. | Poinsett |
| W. I. Stimpson, Agent | Poinsett |
| H. A. Billings, Works Mgr. | Poinsett |
| E. N. Darrin, Vice-Pres. | Poinsett |
| Clare H. Draper, Jr. | Poinsett |
| W. M. Mitchell | Poinsett |
| A. E. Stafford | Ottaray |
| L. C. Lockman | Ottaray |
| C. L. Williams, John O'Neill | Ottaray |
| R. S. Brice, S. A. Stone | Ottaray |
| C. H. Warren, W. P. Ellis | Ottaray |
| P. T. Quinn, R. W. Poole | Ottaray |

**E. I. duPONT de NEMOURS & CO.** — **Booth No. 437-438**
**(Finishes Div.) Atlanta, Ga.** — **Perm. Annex**

| | |
|---|---|
| I. J. Osbun, Sou. Mgr. | Poinsett |
| W. T. Banning, S. E. Sales Mgr. | Poinsett |
| M. J. Hanger, Maintenance Eng. | Poinsett |
| S. W. Quisenberry, Maintenance Eng. | Poinsett |
| I. H. Aberly, Maintenance Eng. | Poinsett |
| E. J. Zimmer, Jr., Maintenance Eng. | Poinsett |

**DU PONT RAYON CO.** — **Booth No. 445**
**350 Fifth Ave., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| F. H. Coker, Dist. Sales Mgr. | _____ |
| E. C. Harrington, Adv. Mgr. | _____ |
| E. C. Welling, Salesman | _____ |
| H. C. Kennette, Salesman | _____ |
| R. H. Fleacher, Salesman | _____ |

**DURABLE SIGN CO.** — **Booth No. 225-E**
**Greenville, S. C.** — **2nd Fl. Main Bldg.**

**ECLIPSE TEXTILE DEVICES, INC.** — **Booth No. 102**
**Elmira, N. Y.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| J. C. Ferguson, Pres. | Poinsett |
| J. P. Garey | Poinsett |
| J. D. Lutes | Poinsett |
| L. A. Uttrich | Poinsett |

**ECONOMY BALER CO.** — **Booth No. 101**
**Ann Arbor, Mich.** — **1st Fl. Main Bldg.**

W. L. MacDonald, Sales Mgr. _____
(Terrell Machine Co. Representatives)

**FAFNIR BEARING CO.** — **Booth No. 472**
**New Britain, Conn.** — **Perm. Annex**

| | |
|---|---|
| C. F. Stanley, Sales Mgr. | _____ |
| C. A. Berg, Sales Eng. | _____ |
| A. G. Laughridge, Sales Rep. | _____ |
| S. D. Berg, Sales Rep. | _____ |
| R. M. Page, Sales Rep. | _____ |
| H. B. Chamberlin, Sales Rep. | _____ |

**FAIRBANKS, MORSE & CO.** — **Booth No. 479**
**Chicago, Ill.** — **Temp. Annex**

| | |
|---|---|
| J. M. Spinks, Mgr. Scale Dept. | _____ |
| O. O. Lewis, Atl. Branch Mgr. | _____ |
| H. E. Graham, Pump & Elec. Mgr. | _____ |
| E. W. Morgan, Charlotte Rep. | _____ |
| T. V. B. Rittenhouse, Columbia Rep. | _____ |
| J. H. Allen, Scale Service Dept. | _____ |

**FIBRE SPECIALTY MFG. CO.** — **Booth No. 478**
**Kennett Square, Pa.** — **Perm. Annex**

| | |
|---|---|
| George B. Scarlett, Pres. | Poinsett |
| Ralph Woods, Sales Mgr. | Poinsett |
| H. R. Chandler, Factory Supt. | Poinsett |
| R. G. Henderson, Dist. Rep. | Poinsett |

**FINNELL SYSTEM, INC.** — **Booth No. 110**
**Elkhart, Ind.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Reuben Finnell, Sou. Div. Mgr. | _____ |
| R. L. Phillips, Carolina Mgr. | _____ |

**FLINTKOTE CO., INC.** — **Booth No. 482**
**New Orleans and Atlanta** — **Temp. Annex**

| | |
|---|---|
| L. A. DeBardelaben, Special Rep. | Poinsett |
| E. H. Westerfield, Rep. | Imperial |

**FOSTER MACHINE CO.** — **Booth No. 251-ABD**
**Westfield, Mass.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| T. E. Connor, Sales Mgr. | _____ |
| Fred P. Brooks, Rep. | _____ |
| R. W. Ensign, Rep. | _____ |
| John Salva, Rep. | _____ |
| E. P. Dodge, Rep. | _____ |

**FOXBORO COMPANY** — **Booth No. 424-426**
**Foxboro, Mass.** — **Perm. Annex**

| | |
|---|---|
| C. E. Sullivan, Gen. Sales Mgr. | Poinsett |
| A. W. Chase, Tex. Div. Mgr. | Poinsett |
| W. W. Barron, Atl. Mgr. | Poinsett |
| B. B. Peacock, Sales Eng. | Poinsett |

**GATES RUBBER CO.** — **Booth No. 207**
**Denver, Col.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| George R. Morgan, S. C. Rep. | ———— |
| V. G. Brookshire, N. C. Rep. | ———— |
| E. Van Hook, Ga. and Tenn. Rep. | ———— |
| D. G. Richards, Ala. Rep. | ———— |
| D. L. Kessler, Factory Eng. | ———— |
| D. J. Broadhurst, S. E. Div. Mgr. | ———— |
| Fred G. Siegrist, N. E. Div. Mgr. | ———— |

**GENERAL ELECTRIC COMPANY** — **Booth No. 116-117**
**Schenectady, N. Y.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| J. E. N. Hume, Asst. Ind. Dept. Mgr. | Poinsett |
| W. W. Cronkhite, Ind. Sales Mgr. | Poinsett |
| F. S. Hartman, Schenectady Mgr. | Poinsett |
| W. J. Dorworth, Phila. Dis. Mgr. | Poinsett |
| E. D. McKellar, Atl. Dis Mgr | Poinsett |

**GENERAL ELECTRIC CO. (INCANDESCENT LAMP DEPT.) Atlanta, Ga.** — **Booth No. 118-A**
**1st Fl. Main Bldg.**

| | |
|---|---|
| Thos. W. Moore, Dis. Mgr. | Poinsett |
| H. M. Horton, Div. Eng. | Poinsett |
| G. E. Park, Sales Rep. | Poinsett |
| W. E. White, Sales Rep. | Poinsett |

**GENERAL ELECTRIC VAPOR LAMP CO.** — **Booth No. 115**
**Hoboken, N. J.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Chas. F. Strebig, Sales Mgr. | Poinsett |
| D. R. Grandy, Commercial Eng. | Poinsett |
| C. N. Knapp, Dist. Mgr. | Poinsett |
| Frank E. Keener, Dist. Mgr. | Poinsett |
| Earle Mauldin, Salesman | Poinsett |

**GERRARD COMPANY, INC.** — **Booth No. 244**
**Chicago, Ill.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| A. Larsen, Sales Mgr. | Virginia |
| W. D. Renois, N. O. Div. Mgr. | Virginia |
| R. J. McClintock, Salesman | Virginia |
| E. J. Roberts, Salesman | Virginia |

**GOWER ELECTRIC SERVICE CO.** — **First Floor Main Building**
**Greenville, S. C.**

| | |
|---|---|
| T. Chas. Gower | Residence |
| R. L. Vaughn | Residence |
| C. Kirby Hammond | Residence |

**GRATON & KNIGHT COMPANY** — **Booth No. 453-454**
**Worcester, Mass.** — **Perm. Annex**

| | |
|---|---|
| H. W. Tuxbury, Sales Mgr. Spec. Div. | Poinsett |
| O. D. Landis, N. C. and S. C. Rep. | Poinsett |
| C. C. Anderson, S. C. Agt. | Poinsett |
| D. A. Ahlstrand, Ga.-Ala. Rep. | Poinsett |
| G. A. Barnard, Belting Div. Sales Mgr. | Poinsett |

**GRINNELL COMPANY** — **Booth No. 125-B**
**Providence, R. I.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| A. J. Loepsinger, Research Mgr. | Poinsett |
| I. W. Knight, Research Dept. | Poinsett |
| R. B. Godley, Atl. Branch Mgr. | Poinsett |
| W. C. Kirby, Contract Dept., Atl. | Poinsett |

**E. F. HOUGHTON & CO.** — **Booth No. 449**
**Philadelphia, Pa.** — **Perm. Annex**

| | |
|---|---|
| H. C. Roberts, Mgr. Textile Sales | Poinsett |
| W. H. Brinkley, Sou. Sales Mgr. | Poinsett |
| Walter Andrew, Sales Supervisor | Poinsett |
| C L. Elgert, Sales Rep. | Poinsett |
| J. E. Davidson, Sales Rep. | Poinsett |
| C. B. Kinney, Sales Rep. | Poinsett |
| D. O. Wylie, Sales Rep. | Poinsett |
| E. R. Holt, Sales Rep. | Poinsett |
| J. J. Reilly, Sales Rep. | Poinsett |
| J. A. Brittain, Sales Rep. | Poinsett |
| Byron E. Dodd, Sales Rep. | Poinsett |
| J. W. Byrnes, Sales Rep. | Poinsett |

**HOWARD BROS. MFG. CO.** — **Booth No. 242-243**
**Worcester, Mass.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Harry C. Coley, Pres. and Treas. | Ottaray |
| E. M. Terryberry, Gen. Sales Agt. | Ottaray |
| Guy L. Melchor, Sr., Atlanta Agt. | Ottaray |
| Guy L. Melchor, Jr., Salesman | Ottaray |

**HUNTINGTON & GUERRY, INC.** — **Booth No. 210**
**Greenville, S. C.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| R. S. Huntington, Pres. | Residence |
| DuPont Guerry, Jr., V-P. and Treas. | Residence |
| J. H. Howard, Sec. | Residence |
| J. Allen Keller, Mgr. Com. Wiring Dept. | Residence |

**HYATT ROLLER BEARING CO.** — **Booth No. 120**
**Newark, N. J.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| H. K. Porter, Gen. Sales Mgr. | Poinsett |
| W. L. Iliff, Eastern Div. Mgr. | Poinsett |
| F. U. Naughton, Jr., Tex. Sales Eng. | Poinsett |
| J. M. Grady, Div. Eng. | Poinsett |
| H. M. Carroll, Adv. Mgr. | Poinsett |

**HYGROLIT, INC.** — **Booth No. 133**
**Kearny, N. J.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| C. F. Dulken, Pres. | Ottaray |
| R. A. Quack, Asst. Treas. | Ottaray |
| H. E. Kresse, Sales Mgr. | Ottaray |

**INTERNATIONAL NICKEL CO., INC.** — **Booth No. 443-444**
**67 Wall St., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| C. J. Bianowicz, Salesman | Piedmont |
| J. F. Nation, Atlanta Agt. | Piedmont |
| E. A. Turner, Salesman | Piedmont |

**INTERNATIONAL SALT CO.** — **Booth No. 412**
**Richmond, Va.** — **Perm. Annex**

| | |
|---|---|
| R. V. Irwin, Salesman | Imperial |
| A. J. Hulsebosch, Spec. Rep. | Imperial |
| J. E. Hughes, Dist. Mgr. | Imperial |
| S. J. Martin, Dist. Mgr. | Imperial |

**IRON FIREMAN MFG. CO.** — **Booth No. 475**
**Cleveland, Ohio** — **Perm. Annex**

| | |
|---|---|
| C. D. Carter, Div. Sales Mgr. | Poinsett |
| S. W. Alford, Dis. Rep. | Poinsett |

**IVANHOE DIV., MILLER CO.** — **Booth No. 119-A**
**Meriden, Conn.** — **1st Fl. Main Bldg.**

**JENKINS BROS.** — **Booth No. 441-442**
**Bridgeport, Conn.** — **Perm. Annex**

| | |
|---|---|
| B. R. Wofford, Salesman | Poinsett |
| E. L. Dean, Salesman | Poinsett |
| H. E. Foster, Salesman | Poinsett |

**JOHNS-MANVILLE CORP.** — **Booth No. 106**
**22 East 40th St., N. Y. C.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| A. S. Royal, Spec. Rep. | Poinsett |
| R. A. Hammond, Dist. Mgr. | Poinsett |
| D. H. Patton, Dist. Eng. | Poinsett |
| R. T. McManus, Sales Rep. | Poinsett |
| J. W. Hamilton, Sales Rep. | Poinsett |
| H. C. Drummond, Sales Rep. | Poinsett |

**JOHNSON BRONZE CO.** — **Booth No. 427**
**New Castle, Pa.** — **Perm. Annex**

| | |
|---|---|
| C. H. Leis, Chief Engineer | c/o Mrs. R. H. Stuart |
| Ira M. Valentine, Atl. Rep. | c/o Mrs. R. H. Stuart |
| P. W. Marceau, Field Engr. | c/o Mrs. R. H. Stuart |
| Eugene Scanlon, Adv. Mgr. | c/o Mrs. R. H. Stuart |

**KEEVER STARCH COMPANY** — **Booth No. 407**
**Columbus, Ohio** — **Perm. Annex**

| | |
|---|---|
| Charles J. Kurtz, Pres. and Gen. Mgr. | Poinsett |
| D. H. Wallace, Sou. Agt. | Residence |
| C. B. Iler, Salesman | Residence |
| L. J. Castile, Salesman | Residence |
| F. M. Wallace, Salesman | Residence |

**A. C. LAWRENCE LEATHER CO.** — **Booth No. 405-406**
**Peabody, Mass.** — **Perm. Annex**

| | |
|---|---|
| H. H. Hersey, Sou. Rep. | Imperial |
| J. M. Baker, Sou. Rep. | Imperial |
| F. R. Kitchell | Imperial |
| S. Palmer | Imperial |

**LESTERSHIRE SPOOL & MFG. CO.** — **Booth No. 202**
**Johnson City, N. Y.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| H. D. Clinton, Pres. | Poinsett |
| L. E. Wooten, Vice-Pres. | Poinsett |

**THOS. LEYLAND MACHINERY CO.** — **Booth No. 430**
**Readville, Mass.** — **Perm. Annex**

| | |
|---|---|
| Frederick T. Walsh, Mgr. | ——— |
| Sidney A. Marlieus, Salesman | ——— |

**LINK-BELT COMPANY** — **Booth No. 220**
**Philadelphia, Pa.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| J. S. Watson, Vice-Pres. | Poinsett |
| H. Bowman, East. Mgr. | Poinsett |
| H. Burkholder, West. Mgr. | Poinsett |
| H. D. Mitchell, P.I.V. Sales Mgr. | Poinsett |
| W. J. Nighbert, N. C. and Va. Rep. | Poinsett |
| J. R. Martin, S. C. and Ga. Rep. | Poinsett |

**LUNKENHEIMER COMPANY** — **Booth No. 450**
**Cincinnati, Ohio** — **Perm. Annex**

| | |
|---|---|
| Harry A. Burdorf, Sales Mgr. | Imperial |
| Kenneth Bishop, Salesman | Imperial |
| E. L. Hertenstein, Salesman | Imperial |

**MARCHANT CALCULATING MACHINE COMPANY** — **Booth No. 251-C**
**Oakland, California** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| A. E. Bradshaw, Atl. Agt. | Ottaray |
| A. T. Davis, Greenville Agt. | Residence |
| W. W. Harris, Charlotte Agt. | Ottaray |
| D. R. McAlpine, Nashville Agt. | Ottaray |
| J. T. McArthur, Birmingham Agt. | Ottaray |

**MATHIESON ALKALI WORKS** — **Booth No. 469-470**
**250 Park Ave., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| Fred O. Tilson, Sou. Dis. Sales Mgr. | Poinsett |
| R. C. Staples, Salesman | Poinsett |
| J. W. Ivey, Salesman | Poinsett |
| Watt McCain, Salesman | Poinsett |
| Z. N. Holler, Salesman | Poinsett |

**McLEOD COMPANIES** — **Booth No. 249**
**Greensboro, N. C.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| W. B. McLeod, Pres. | Poinsett |
| Karl Fisher, Sec. | Poinsett |
| E. C. Barnhardt, Jr., Salesman | Poinsett |
| J. E. Carrigan, Jr., Salesman | Poinsett |
| D. C. Neese, Salesman | Poinsett |
| D. R. Dickson, Manager | Poinsett |
| R. B. Dorman, Salesman | Poinsett |
| Jim Williams, Salesman | Poinsett |
| Spat Bailey, Salesman | Poinsett |
| Hugh Graham, Salesman | Poinsett |
| C. G. Mason, Mgr. Elec. Dept. | Poinsett |
| Harper Dicks, Salesman | Poinsett |

**MERROW MACHINE COMPANY** — **Booth No. 203**
**Hartford, Conn.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| E. W. Hollister, Sales Rep. | Imperial |
| R. B. Moreland, Sales Rep. | Imperial |

**MONROE CALCULATING MACHINE CO.** — **Booth No. 225-G**
**Orange, N. J.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| J. C. Fleming, Dis. Mgr. | ——— |

**NEW DEPARTURE MFG. CO.** — **Booth No. 436**
**Bristol, Conn.** — **Perm. Annex**

| | |
|---|---|
| E. M. Potter, Engineer | Cleveland (Sptnburg) |
| F. W. Marschner, West. Sales Mgr. | Cleveland (Sptnburg) |
| L. G. Sigourney Sales Mgr. and Sec. | Cleveland (Sptnburg) |
| Rodger Brouwer, Sales Eng. | Cleveland (Sptnburg) |
| John Collins, Adv. Dept. | Cleveland (Sptnburg) |
| C. C. Beckwith, Adv. Mgr. | Cleveland (Sptnburg) |

**N. Y. & N. J. LUBRICANT CO.** — **Booth No. 109**
**292 Madison Ave., N. Y. C.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Joseph H. Bennis, Sales Mgr. | Ottaray |
| Lewis W. Thomason, Sou. Dist. Mgr. | Ottaray |
| Falls L. Thomason | Ottaray |
| F. D. Jacoway | Ottaray |
| W. C. Taylor | Ottaray |
| J. A. Sorrells, Jr. | Ottaray |

**NORMA-HOFFMAN BEARINGS CORP.** — **Booth No. 451-452**
**Stamford, Conn.** — **Perm. Annex**

| | |
|---|---|
| O. P. Wilson, Vice-Pres. | ——— |
| H. J. Ritter, Sales Mgr. | ——— |
| D. E. Batesole, Asst. Chief Eng. | ——— |
| T. E. Rounds, Eng. Dept. | ——— |
| E. W. Lawrence, Charlotte, Rep. | ——— |
| C. D. Kilham, Cincinnati Rep. | ——— |
| R. V. Donnelly, N. E. Rep. | ——— |

**JOHN P. NISSEN, JR., CO.** — **Booth No. 225-C**
**Philadelphia, Pa.** — **2nd Fl. Main Bldg.**

**NORTH AMERICAN RAYON CORP.** — **Booth No. 423**
**261 5th Ave., N. Y. C.** — **Perm. Annex**

**OTIS ELEVATOR COMPANY** — **Booth No. 474**
**Atlanta, Ga.** — **Perm. Annex**

| | |
|---|---|
| J. Horacek, Asst. Dist. Mgr. | ——— |
| M. A. Meyer, Construction Mgr. | ——— |
| F. G. Merck, Local Mgr. | Residence |

**PACIFIC LUMBER CO.** — **Booth No. 458**
**122 East 42nd St., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| H. B. Alston, East. Sales Mgr. | ——— |
| George Roberts, Gen. Mgr. | ——— |

**PARKS-CRAMER COMPANY** — **Booth No. 127**
**Fitchburg, Mass.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| R. S. Parks, Chairman of Board | Poinsett |
| P. A. McKittrick, Treas and Gen. Mgr. | Poinsett |
| Wm. B. Hodge, Vice-Pres. | Poinsett |
| W. H. Burnham, Salesman | Poinsett |
| O. G. Culpepper, Salesman | Imperial |
| John F. Porter, Salesman | Imperial |
| H. B. Rogers, Salesman | Imperial |
| J. R. Henderson, Engineer | Imperial |
| E. S. Rothrock, Inspector | Imperial |

**PARKS & WOOLSON MACHINE CO.** — **Booth No. 227**
**Springfield, Vt.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Wm. N. Hadley, Gen. Mgr. | Poinsett |
| John W. Hogue, Head Designer | Poinsett |
| P. B. Raiford, Jr. | Poinsett |

**PENICK & FORD, LTD., Inc.** — **Booth No. 439-440**
**Cedar Rapids, Iowa** — **Perm. Annex**

| | |
|---|---|
| D. P. O'Connor | Poinsett |
| H. A. Horan | Poinsett |
| Guy L. Morrison | Poinsett |
| C. T. Lassiter | Poinsett |
| J. H. Almand | Poinsett |
| P. G. Wear | Poinsett |
| W. J. Kirby | Poinsett |

**PERMUTIT COMPANY** — **Booth No. 413**
**330 West 42nd St., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| N. D. Doane, Sales Rep. | Imperial |
| H. H. Morrison, Sales Rep. | Imperial |

**PHIPPS & BIRD, INC.** — **Booth No. 225-D**
**Richmond, Va.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| L. C. Bird, Pres. | Poinsett |
| Ralph R. Chappell, Chief Eng. | Poinsett |

**POMONA PUMP CO., Inc.** — **Booth No. 208**
**Pomona, Calif.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| H. B. Spaid | ——— |
| John A. Dodd | ——— |
| George R. Morgan | Residence |

**PORT UTILITIES COMMISSION** — **Booth No. 422**
**Charleston, S. C.** — **Perm. Annex**

| | |
|---|---|
| H. P. Dew, Traffic Mgr. | ——— |

**POWER TRANSMISSION COUNCIL** — **Booth No. 228-229**
**370 Lexington Ave., N. Y. C.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Victor A. Hanson, Research Engineer | 1743 N. Main Ext. |
| R. E. Walker, Jr., Research Engineer | 1743 N. Main Ext. |
| Alfred Kullman, Research Engineer | 1743 N. Main Ext. |

**POWERS REGULATOR COMPANY** — **Booth No. 431-432**
**Chicago, Ill.** — **Perm. Annex**

| | |
|---|---|
| E. R. Foss, Sou. Dist. Mgr. | Ottaray |
| W. E. Gray, Salesman | Ottaray |
| W. C. Heckeroth, Sales Rep. | Ottaray |
| J. W. Powers, Factory Rep. | Ottaray |
| F. E. P. Klages, Res. Engr. | Ottaray |

**RAYON AND MELLIAND TEXTILE MONTHLY** — **Booth No. 418-419**
**303 Fifth Ave., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| S. E. Williams, Bus. Mgr. | ——— |

**REEVES PULLEY CO.** — **Booth No. 232**
**Columbus, Ind.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| C. L. Irwin, Sales Engr. | Poinsett |
| D. M. McSpadden, Charlotte Mgr. | Poinsett |
| Alfred Jepson, Atlanta Mgr. | Poinsett |
| J. W. Vaughan, Jr., Greenville Mgr. | Residence |

**REPUBLIC STEEL CORP.** — **Booth No. 128**
**Youngstown, Ohio** — **1st Fl. Main Bldg.**

| | |
|---|---|
| K. D. Mann, Dist. Sales Mgr. | ——— |
| C. C. Snyder, Salesman | ——— |
| Gale R. Irvin, Salesman | ——— |
| John W. Minor, Salesman | ——— |
| C. W. Ruth, Asst. Adv. Mgr. | ——— |
| G. W. Hinkle, Salesman | ——— |

**J. E. RHOADS & SONS** — **Booth No. 245-246**
**Philadelphia, Pa.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| Philip G. Rhoads, Chief Engr. | 7 Harcourt |
| J. Edgar Rhoads, Prod. Mgr. | 7 Harcourt |
| L. H. Schwoebel, Salesman | 7 Harcourt |
| C. R. Mitchell, Atlanta Mgr. | 7 Harcourt |
| J. W. Mitchell, Salesman | 7 Harcourt |

**R. I. WARP STOP EQUIP'T CO.** — **Booth No. 130**
**Pawtucket, R. I.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Edwin C. Smith, Pres. | Imperial |
| Wm. D. Whittaker, Sou. Rep. | Imperial |
| W. L. Ferguson, Salesman | Imperial |
| George W. Smith, Salesman | Imperial |
| W. A. McKinney, Salesman | Residence |

**WM. C. ROBINSON & SON CO.** — **Booth No. 104**
**Baltimore, Md.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| Robert T. Purkins, Vice-Pres. | Poinsett |
| B. D. Heath, Sou. Mgr. | Poinsett |
| Robert J. Maxwell, Dis. Mgr. | Poinsett |
| Ben F. Houston, Dis. Mgr. | Poinsett |
| Fred W. Smith, Dis. Mgr. | Poinsett |

**ROCKWOOD MFG. CO.** — **Booth No. 222-224**
**Indianapolis, Ind.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| G. O. Rockwood, Pres. | Poinsett |
| W. D. Hamerstadt, Gen. Mgr. | Poinsett |
| Robert W. Drake, Engr. | Poinsett |
| E. Y. Brown, Engr. | 425 N. Main St. |
| J. F. Jenks, Engr. | 425 N. Main St. |
| L. B. Warren, Engr. | 425 N. Main St. |
| S. R. Sayles, Engr. | 425 N. Main St. |

**SACO-LOWELL SHOPS** — **Booth No. 226**
**Boston, Mass.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| W. Frank Lowell, Vice-Pres. | Poinsett |
| James Strang | ——— |
| M. A. Comer, H. P. Worth | ——— |
| Alex R. Davis, F. E. Rowe, Jr. | ——— |
| Walter W. Gayle, R. E. Lindsay | ——— |
| John L. Graves, H. M. Walsh | ——— |

**SARCO COMPANY, INC.** — **Booth No. 473**
**183 Madison Ave., N. Y. C.** — **Perm. Annex**

| | |
|---|---|
| E. E. Wells, Sales Engr. | ——— |
| John R. Purser, Jr., Rep. | ——— |

**SHERWIN-WILLIAMS COMPANY** — **Booth No. 401**
**Philadelphia, Pa.** — **Perm. Annex**

| | |
|---|---|
| A. H. Kennedy, Mgr. Tex. Sales | Poinsett |
| E. H. Steger, Rep. | Poinsett |
| R. B. Olney, Rep. | Poinsett |
| J. N. Limback, Rep. | Poinsett |
| W. B. Bell, Ind. Sales Mgr. | Poinsett |
| E. S. Johnson, Ind. Sales Mgr. | Poinsett |
| G. L. Hehl, Supt. Plant No. 4 | Poinsett |
| R. M. Bennett, Mgr. Prop. Maintenance Sales | Poinsett |

**SINGER SEWING MACHINE CO.** — **Booth No. 230**
**Atlanta, Ga.** — **2nd Fl. Main Bldg.**

| | |
|---|---|
| J. P. Baiter | Ottaray |
| F. B. Williams (Diehl Mfg. Co.) | Ottaray |
| J. C. Lewis | Ottaray |
| P. R. Mohney | Ottaray |
| H. C. Morehouse | Ottaray |
| I. F. Webb | Ottaray |
| P. N. Thorpe (Diehl Mfg. Co.) | Ottaray |
| C. S. Womack | Ottaray |
| S. G. Boyd (Diehl Mfg. Co.) | Ottaray |

**J. E. SIRRINE & COMPANY** — **Booth No. 215**
**Greenville, S. C.** — **2nd Fl. Main Bldg.**

**SKF INDUSTRIES, INC.** — **Booth No. 467-468**
**Philadelphia, Pa.** — **Perm. Annex**

| | |
|---|---|
| R. H. DeMott, Sales Mgr. | Poinsett |
| B. F. Davis, Textile | Poinsett |
| R. C. Byler, Adv. Mgr. | Poinsett |
| H. A. Fonda, Boston Mgr. | Poinsett |
| R. W. Franklin, Charlotte Mgr. | Poinsett |
| N. Miller, Atlanta Mgr. | Poinsett |
| J. F. Thomas, Textile | Poinsett |

**SONOCO PRODUCTS COMPANY** — **Booth No. 103**
**Hartsville, S. C.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| W. A. Biggs, Salesman | Imperial |
| P. F. Williams, Salesman | Imperial |
| H. F. Gaffney, Salesman | Imperial |

**SOUTHERN SHUTTLES, INC.** — **Booth No. 435**
**Greenville, S. C.** — **Perm. Annex**

| | |
|---|---|
| Louis P. Batson, Pres. | 1525 Augusta Road |
| W. J. D. Long, Supt. | 414 E. North St. |
| J. D. Long, Sales and Service | 414 E. North St. |
| E. E. Simmons, Sales and Service | 8 Allen St. |
| A. B. Mixon, Sales and Service | 102 E. Washington |

**STALEY SALES CORP.** — **Booth No. 415**
**Decatur, Ill.** — **Perm. Annex**

| | |
|---|---|
| H. P. Dunlap, Vice-Pres. and Sales Mgr. | Poinsett |
| W. H. Randolph, Jr., Sou. Mgr. | Poinsett |
| George A. Dean | Ottaray |
| J. A. Harris | Ottaray |
| W. T. Osteen | Residence |
| T. L. Smith | Ottaray |
| R. R. Berry, Jr. | Ottaray |

**STANDARD CHEMICAL PRODUCTS, INC.** — **Booth No. 421**
**Hoboken, N. J.** — **Perm. Annex**

| | |
|---|---|
| L. L. Grombacher, Pres. | Poinsett |
| George I. Purvis, Salesman | Poinsett |
| Max Einstein, Salesman | Poinsett |
| Gordon M. Stanton (Suter's agent) | Poinsett |

**STANDARD OIL CO. OF N. J.** — **Booth No. 113**
**Columbia, S. C.** — **1st Fl. Main Bldg.**

| | |
|---|---|
| E. H. Collins, Div. Mgr. | Poinsett |
| A. M. Graves, Wholesale Mgr. | Poinsett |
| D. S. Lewis, Asst. Wholesales Mgr. | Poinsett |
| S. J. Murphy, Marketing Asst. | Poinsett |
| E. H. Arrington, Lub. Ass't. | Poinsett |
| H. H. Arrington, Lub. Salesman | Poinsett |
| W. H. FitzSimons, Jr., Lub. Salesman | Poinsett |

D. K. Montgomery, Lub. Salesman — Poinsett
C. M. Byers, N. C. Div. Mgr. — Poinsett
C. E. Motte, Wholesale Mgr. — Poinsett
J. L. Wright, Asst. Wholesale Mgr. — Poinsett
F. B. Miller, Lub. Ass't. — Poinsett
D. A. Gibson, Lub. Salesman — Poinsett
E. P. Hayes, Lub. Salesman — Poinsett
A. E. Willis, Jr., Lub. Salesman — Poinsett
G. W. Pressley, Jr., Lub. Salesman — Poinsett
R. A. Parsley, Jr., Lub. Salesman — Poinsett
F. L. Snipes, Lub. Salesman — Poinsett

**STEEL HEDDLE MFG. COMPANY** — **Booth No. 123**
**Philadelphia, Pa.** — **1st Fl. Main Bldg.**
John J. Kaufmann, Pres. and Gen. Mgr. — Poinsett
Robert J. Freitag, Sec. and Treas. — Poinsett
V. C. Hassold, Supt. — Poinsett
John J. Kaufmann, Jr., Asst. Vice-Pres. — Residence
Henry E. Littlejohn, Sou. Mgr. — Residence
H. Raiford Gaffney, Atlanta Mgr. — ———
C. W. Cain, Greensboro Mgr. — ———
D. L. Batson — Residence

**STEIN, HALL & CO., INC.** — **Booth No. 209**
**285 Madison Ave., N. Y. C.** — **2nd Fl. Main Bldg.**
Ira L. Griffin, Sou. Mgr. — Poinsett/Imperial
W. N. Kline, Jr., Salesman — Poinsett/Imperial
T. C. Davis, Salesman — Poinsett/Imperial
Russell Gill, Salesman — Poinsett/Imperial
J. W. Stallings, Chemist — Poinsett/Imperial

**STEWART-WARNER CORP.**
**(Alemite)** — **Booth No. 231**
**Chicago, Ill.** — **2nd Fl. Main Bldg.**
Paul D. Wilson, Wholesale Sales Mgr. — Ottaray
Otto A. L. Keser, Sales Engr. — Ottaray
A. J. Tilton, Sales Engr. — Ottaray

**ALFRED SUTER** — **Booth No. 420**
**200 Fifth Ave., N. Y. C.** — **Perm. Annex**
Gordon M. Stanton — Poinsett
Max Einstein, Sou. Agt. — Poinsett

**SWAN FINCH OIL CORP.** — **Booth No. 249**
**205 East 42nd St., N. Y. C.** — **2nd Fl. Main Bldg.**
J. W. Littlefield — 214 Mt. View Ave

**C. J. TAGLIABUE MFG. CO.** — **Booth No. 428-429**
**Brooklyn, N. Y.** — **Perm. Annex**
D. J. Martin, Sales Engr. — Poinsett
J. S. Pendleton, Sales Engr. — Poinsett
V. Vichum, Chief Engr. — Poinsett

**W. O. & M. W. TALCOTT, INC.** — **Booth No. 411**
**Providence, R. I.** — **Perm. Annex**
M. W. Talcott, Pres. & Treas. — Virginia
G. W. Little, Salesman — Virginia
L. M. Sheldon, Salesman — Virginia

**TAYLOR INSTRUMENT COMPANIES** — **Booth No. 446-447**
**Rochester, N. Y.** — **Perm. Annex**
H. M. Barker, Atlanta Mgr. — Imperial
T. C. Hazard, Sales Dept. — Imperial

**TERRELL MACHINE CO.** — **Booth No. 101**
**Charlotte, N. C.** — **1st Fl. Main Bldg.**
E. A. Terrell, Pres. — Poinsett
A. C. Kimbirl, Salesman — Poinsett
John J. Wilson, Jr., Salesman — Residence
W. S. Terrell, Salesman — Poinsett

**TEXAS COMPANY** — **Booth No. 455-456**
**Mortgage Guarantee Bldg., Atlanta, Ga.** — **Perm. Annex**
T. E. Horton, Dis. Mgr. — Imperial
E. A. Harper, Chief Lub. Eng. — Imperial
P. H. Baker, Lub. Eng. — Imperial
L. C. Mitchum, Lub. Eng. — Imperial
W. N. Dulaney, Lub. Eng. — Imperial
F. G. Mitchell, Lub. Eng. — Imperial

**TEXTILE BULLETIN** — **Booth No. 204**
**Charlotte, N. C.** — **2nd Fl. Main Bldg.**
David Clark, Editor — Poinsett
Junius M. Smith, Bus. Mgr. — Poinsett
D. H. Hill, Jr., Asso. Editor — Poinsett
Ben Thomas, Circulation Dept. — Poinsett
Mrs. Ethel Thomas Dabbs, Cir. Dept. — Poinsett
Miss Henrietta Quinn, Cir. Dept. — Poinsett
F. R. Carey, Adv. Dept. — Poinsett

**TEXTILE-FINISHING MACHINERY CO.** — **Booth No. 114**
**Providence, R. I.** — **1st Fl. Main Bldg.**
H. G. Mayer, Sou. Rep. — Poinsett
James Cook, Sou. Rep. — Poinsett
Albert H. Goff, Sales Eng. — Poinsett
Wallace Taylor, Sales Eng. — Poinsett

**TEXTILE SPECIALTY CO., INC.** — **Booth No. 477**
**Greensboro, N. C.** — **Perm. Annex**
L. C. Atkisson, Pres. — ———
F. A. Decker, Vice-Pres. — ———
E. R. Bond, Sec.-Treas. — ———
F. O. Gibbs — ———

**TEXTILE WORLD** — **Booth No. 214**
**330 West 42nd St., N. Y. C.** — **2nd Fl. Main Bldg.**
A. P. Gumaer, Manager — ———
D. G. Woolf, Editor — ———
E. D. Fowle, Asso. Editor — ———
W. G. Ashmore, Sou. Editor — ———

**THE TODD COMPANY** — **Booth No. 250-C**
**Rochester, N. Y.** — **2nd Fl. Main Bldg.**
H. D. Archer, Rep. — 627 N. Main
D. D. Woodman, Rep. — 627 N. Main

**TOLEDO PIPE THREADING MACH. CO.** — **Booth No. 485**
**Toledo, Ohio** — **Temp. Annex.**
W. R. Vosper, Sales Engr. — ———
C. E. Hartsing, Sales Rep. — ———

**TOLEDO SCALE COMPANY** — **Booth No. 460-461**
**339 Peachtree, Atlanta, Ga.** — **Perm. Annex**
W. M. Randolph, Sou. Zone Mgr. — 205 E. Washington
W. F. Mackinnon, Dist. Mgr. — 205 E. Washington
E. B. Heape, Agent — 205 E. Washington
R. H. Grimes, Salesman — 205 E. Washington

**U. S. GUTTA PERCHA PAINT CO.** — **Booth No. 201**
**Providence, R. I.** — **2nd Fl. Main Bldg.**
Alex S. West, Gen. Sales Agt. — Poinsett
John S. Palmer, Salesman — Poinsett
Lucien K. Palmer, Salesman — Poinsett
Louis M. Hardy, Salesman — Poinsett

**U. S. RING TRAVELER CO.** — **Booth No. 433-434**
**Providence, R. I.** — **Perm. Annex**
W. P. Vaughan, Sou. Agent — 205 Mills Ave.
O. B. Land, Sou. Rep. — 205 Mills Ave.
T. L. Maynard, Sou. Rep. — 205 Mills Ave.

**UNIVERSAL WINDING COMPANY** — **Booth No. 234-236**
**Boston, Mass.** — **2nd Fl. Main Bldg.**
E. O. Smith, Vice-Pres. — Poinsett
Robert Leeson — Poinsett
Ralph L. Chisholm, Adv. Mgr. — Poinsett
R. M. Mauldin, Sou. Agt. — Poinsett
I. E. Wynne, Charlotte Agt. — Poinsett
J. W. Stribling, Atlanta Agt. — Poinsett

**VEEDER-ROOT, INC.** — **Booth No. 107-108**
**Hartford, Conn.** — **1st Fl. Main Bldg.**
G. H. Anthony, Pres. — Poinsett
A. E. Kallinich, Field Sales Mgr. — Poinsett
Edwin Howard, Sou. Sales Mgr. — Poinsett
R. W. Bailey, Sou. Rep. — Poinsett
J. V. Verner, Sou. Rep. — Poinsett
A. Rasmussen, Salesman — Poinsett
J. H. Chaplin, Sales Mgr. — Poinsett

| | | |
|---|---|---|
| **WALKER ELECTRICAL CO.** | **Booth No. 118** | |
| **Atlanta, Ga.** | **1st Fl. Main Bldg.** | |
| R. M. Walker, Gen. Mgr. | | |
| H. O. Burnside, Carolina Rep. | | |
| **WALKER MANUFACTURING CO.** | **Booth No. 249** | |
| **Philadelphia, Pa.** | **2nd Fl. Main Bldg.** | |
| John Walker, Jr., Vice-Pres. | | Imperial |
| R. T. Osteen, Sou. Rep. (and McLeod Co. Reps.) | | 11 Perry Road |
| **WALTHAM WATCH CO.** | **Booth No. 101** | |
| **Waltham, Mass.** | **1st Fl. Main Bldg.** | |
| (Terrell Machine Co. Reps.) | | |
| **WATSON-WILLIAMS MFG. CO.** | **Booth No. 122** | |
| **Millbury, Mass.** | **1st Fl. Main Bldg.** | |
| Wilbur L. Watson, Pres. | | Poinsett |
| Clifton E. Watson, Vice-Pres. & Gen. Mgr. | | Poinsett |
| Hubert J. Watson, Treas. | | Poinsett |
| Philip L. Spencer, Supt. | | Poinsett |
| George F. Bahan, Rep. | | Poinsett |
| **WELLINGTON MACHINE CO.** | **Booth No. 120-C** | |
| **Wellington, Ohio** | **1st Fl. Main Bldg.** | |
| C. A. Glass, Sales Mgr. | | Poinsett |
| G. H. Woolley, Sales Rep. | | Poinsett |
| Spotswood R. Parker, Sales Rep. | | Poinsett |
| R. B. Dorman, Sales Rep. | | Poinsett |
| **WESTINGHOUSE ELEC. & MFG. CO.** | **Booth No. 465** | |
| **East Pittsburgh, Pa.** | **Perm. Annex** | |
| N. G. Symonds, Vice-Pres. | | Poinsett |
| Thomas Fuller, Southeastern Mgr. | | Poinsett |
| John Gelzer | | Poinsett |
| M. A. Land | | Poinsett |
| Louis Speake | | Poinsett |
| J. H. Reeves | | Poinsett |
| J. W. Brooks | | Poinsett |
| John Boesch | | Poinsett |
| G. D. Bowne | | Poinsett |
| J. R. Olnhausen | | Poinsett |
| E. C. Delano | | Poinsett |
| E. S. Lammers | | Poinsett |
| **WESTINGHOUSE ELEC. SUPPLY CO.** | **Booth No. 486** | |
| **Charlotte, N. C.** | **Temp. Annex** | |
| C. W. Dustin, Dis. Mgr. | | Poinsett |
| W. A. Emerson, Div. Mgr. | | Poinsett |
| D. N. Asbury, G'ville Rep. | | Poinsett |
| **G. A. WHITE & COMPANY** | **Booth No. 113-A** | |
| **Charlotte, N. C.** | **1st Fl. Main Bldg.** | |
| G. A. White, Mgr. | | Virginia |
| John C. Nash (Int. Moistening Co.) | | Virginia |
| John W. Jackson (Jackson Moistening Co.) | | Virginia |
| **WHITIN MACHINE WORKS** | **Booth No. 237-238** | |
| **Whitinsville, Mass.** | **2nd Fl. Main Bldg.** | |
| E. Kent Swift, Pres. & Treas. | | |
| W. H. Hoch, Asst. Treas. | | |
| R. I. Dalton, Agent | | |
| W. H. Porcher, Agent | | |
| M. P. Thomas, Salesman | | |
| I. D. Wingo, Salesman | | |
| M. J. Bentley, Salesman | | |
| W. F. Johnson, Rep. | | |
| F. E. Bozeman, Jr. | | |
| **WHITINSVILLE SPINNING RING CO.** | **Booth No. 203** | |
| **Whitinsville, Mass.** | **2nd Fl. Main Bldg.** | |
| W. P. Dutemple, Sales Mgr. | | Poinsett |
| Walter Nicholson, Sou. Agent | | Poinsett |

## Review of Textile Research

A review of textile research which includes advances of the past four years and the trend of technical investigation now in progress at the Massachusetts Institute of Technology is contained in a report recently issued by Dr. Karl T. Compton, president of the Institute and chairman of the advisory and textile education survey committees of the Textile Foundation. This report deals particularly with various studies made possible at the Massachusetts Institute of Technology by a grant of $42,694 from the Textile Alliance in 1930.

Progress in textile research made possible by the fund, Dr. Compton's report shows, was greater during the past four years than during the 20 years previous to 1930. Textile research at Technology, which is carried on in the department of mechanical engineering, has three major objectives. One is the development of suitable apparatus and techniques for the mechanical and microscopical testing of textile fibers, yarns and fabrics. Another is the solution of current problems arising in the textile industry.

Third, there is the application of developments in other fields to textile research, including X-ray analysis, polarized light, high speed motion picture photography, direct color photography, photronic cells, and high voltage electricity, with a view to keeping in advance of current laboratory practice and for a better attack on problems of fundamental significance.

The various testing machines in the Institute's laboratories have been renewed and several pieces of special equipment have been designed and constructed. The development of textile microscopy under the direction of Professor Edward R. Schwarz has already made important contributions to textile research. Special optical instruments have made possible advances in the study of raw and manufactured textile materials, and the Institute's textile microscopy laboratory is now believed to have facilities for research in this field unexcelled anywhere in the world.

Three of the research fellowship projects established by the Textile Foundation in 1932 were assigned to Technology. One of these is in the field of microbiology, and important work has been done in cooperative studies under the direction of the textile laboratory and of Professor Samuel C. Prescott, head of the department of biology and public health.

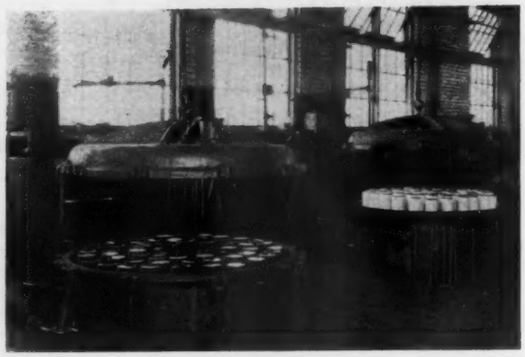
Professor Arthur C. Hardy, who developed the color analyzer, a device for measuring the color of opaque materials, such as paper, textile fabrics, ceramic products, and painted surfaces, cooperated in a project which had as its purpose a spectrophotometric color analysis of dyed textiles. Professor James F. Norris of the department of chemistry cooperated in another project in the field of organic chemistry of dyes. Valuable assistance was given by staff members of the department of geology in a study of petrographic methods and their application to precise determination of refractive indices for textile fibers.

While this research program was being carried on, members of the staff, particularly Professor Schwarz and Professor George B. Haven, were active in cooperative studies with various branches of the textile industry and several textile associations. Many problems submitted by textile mills were investigated in the Institute's laboratory. Professor Schwarz also has been active in various committees in the textile field, and is chairman of the board of editors of the United States Institute for Textile Research, Inc.

# Some Remarks on Level Dyeing

**In which a well known southern dyer and chemist declares that the Bard of Avon knew and wrote of the dyer's problems in this regard . . . .**

By Harold Schroeder



Showing packages before and after being compressed on machine spindles in the Franklin Process machine . . . . . .

A FEW days ago, while I had a little leisure time—to be exact, while I was fitting a new blade into my safety razor—it occurred to me what a major literary loss it was that William Shakespeare, that eminent playwright, never came into contact with General Hugh S. Johnson. To be sure, the Bard of Avon, with the prophetic instinct of genius, had provided the future with appropriate phrases, such as, "He was a man the like of which we shall never see again," and mentioned that "age could not stale nor custom wither his infinite variety," but it is definitely a loss to the world that these two men lived in different ages, since with the doughty general as material, Shakespeare would have fashioned the most stupendous play of all time, even if it would have remained unstaged for lack of any actor to handle the star part.

At this point I feel sure that indignant readers are beginning to bang on the table and demand just what William Shakespeare has to do with textiles and level dyeing in particular, so I wish to state with all the gravity appropriate to the occasion that as a result of extensive research I have determined that William Shakespeare, a great social gad-about, was on very friendly terms with an Elizabethan dyer, and must have spent many hours in his company listening to his troubles, for we find a clear record in one of his plays of what this dyer said. You realize that in accordance with the customs of the time, it was actually written in code, however, I have decoded it and here is a transcript:

> To boil or not to boil, that is the question:
> Whether 'tis wiser in the end to suffer
> The streaks and crocking in this delayed rush lot,
> Or do what should be done to the sad shades
> And by a stripping end them. To dye, to strip
> No more and with more oil to say we end
> The off shades, crow's feet and all the barre stripes
> That lots are heir to, 'tis a consummation
> Devoutly to be wished!

You will see that even at this early date, when all anybody had to do of an afternoon was to bowl on the green, and between pulls at a stein to watch for the Spanish Armada, that dyers were faced with alternatives, that they had the choice of this or that or the other thing, with disaster certain if they selected the wrong one, and no certain guaranty of success if they chose the right one. I feel sure that it was after a prolonged session on a rainy afternoon with this dyer that Shakespeare slipped away and started work on Hamlet, the gloomy prince of Denmark.

Which brings us plausibly, logically and straight like an arrow to the question of level dyeing, at which point I can feel that a great hush falls over the audience while each individual member ponders just how level is level in connection with his own particular problem. It is, I suppose, unnecessary to point out that each branch of the dyeing industry has its own special requirements as to levelness and it is undoubtedly the case that the higher up we go in the scale of level dyeing, so much more is the dyer dependent on what has been done mechanically to the goods previous to dyeing.

This matter of divided responsibility is, of course, inevitable since no dyer can also be a weaver, a knitter, a spinner and a twist setter, so he has to depend on a great many other equally competent people. This side of level dyeing is so controversial an issue and contains so much exothermic material that we will set it out on the window sill to cool, and will consider only those spots, streaks, etc., which are exclusively a dyehouse contribution and which can cause so much grief in the best regulated dyehouses.

In previous articles I have pointed out the vital necessity of an even, adequate, mechanical circulation in the dyebath as the basis of level dyeing, and how there is nothing that the dyer can do, in the way of chemical additions to the dyebath, to offset any radical variations in the mechanical circulation if they exist. The master mechanic is an important factor in the economic life of the dyer, and I wish it could be brought to the attention of engineers, master mechanics and machine designers that no dyeing machine I have ever seen had an adequate and quick acting drain. In the dyeing of vat colors, sulphur colors and developed shades, the prompt disposal of the dyebath is a great help in the prevention of streaks, and a dyebath which takes seven minutes to empty itself is no real help to any dyer, especially in hot weather.

While on the subject of things mechanical, we might bring up the matter of valves. There is a splendid opportunity for some valve manufacturer to bring out a valve for a dyeing machine that will

stand up to the service. Valve makers show a mild, pained surprise when it is pointed out to them that the valves fail—about all they say is that no valve is supposed to stand such punishment, that no valve is supposed to be operated so often, that the sand and grit and the chemicals corrode the seat and what can they do about it? All that the dyer can attempt to do is to attempt to fix up the spoiled lot and order another valve.

Spots in developed colors are one source of grief to dyehouses. The action of sunlight is a well known cause of these, but there are several other less publicized reasons which are probably known to every dyer, but which have not been dragged forth into the light of day.

### A Puzzling Investigation

Some time ago, having an epidemic of these spots to contend with, I collected the available shade card literature on developed colors and tabulated the various formulae. After a prolonged and nerve-racking battle with the ridiculous combinations of the metric and other systems of weights, with the baffling concealment of liquid caustic in various strengths and as a last final attempt to make dyeing difficult, with formulae in noggins, whatever they are, I discovered that in the case of beta naphthol the recommended proportions of caustic soda dry varied from equal amounts to one-third of the weight of the beta naphthol. This great spread in opinion seemed to offer a chance for investigation, and to cut a long story short I found that the less caustic soda used, particularly in the case of Primuline, the less the chance of spots. Finally it seemed that the caustic soda used should be figured on the weight of the water and not on the weight of the beta naphthol; four ounces of caustic soda dry per 100 gallons of water is quite a reasonable amount to use, though naturally this has to be used with some bearing in mind of how much acid was used with the sodium nitrite in the previous diazotising bath.

### The Sulphonated Fatty Alcohols

Even this did not completely eliminate the spots, though it did make a very decided improvement. There was quite obviously something else at work which puzzled the dyer concerned for a very long time until, again to cut the story short, it was noticed that in a two-compartment machine we never found spots in goods dyed on one compartment, and usually found them in the other. The difficulty was traced to electrolytic action exaggerated by a slow drain line and was eliminated by always keeping the goods in motion until in the developing bath. So, for a while at least the matter of spots in developed goods is at rest in one dyehouse, but it would not surprise me or any other dyer if spots on developed colors broke out again any old time. I remember one lot of single gray yarn that could not be developed without spots, no matter on what machine in the dyehouse it was tried. We never had anything like that again, but it seems reasonable to suppose that further causes of spots are still to be discovered.

Since I last burst forth into print on the subject of level dyeing, the sulphonated alcohols have come into distinct and well-merited prominence without prejudice to the long established sulphonated oils. These sulphonated fatty alcohols, while possessing no real active penetrating powers, do have a pronounced leveling action on dyestuffs, or perhaps more of a retarding action regulating the giddy enthusiasm of the dyestuff. These products would seem to have a definite substantive action for the cotton fiber, so much so in some cases that while the necessary retarding action may be present at the start of the dyeing, it may have lessened so much by the time that the dyeing is finished that further additions of the leveling agent may be required to take care of additions of dyestuff. This has been found to be especially noticeable in warp dyeing where the bath is unusually concentrated and the yarn has a more than better opportunity to absorb the chemicals in the bath.

New retarding agents for the dyeing of vat colors have been brought out recently which have desirable results in leveling the highly substantive vat colors, but it has been my experience that it is still necessary to take the greatest of care in using the correct proportions of caustic and hydro in conjunction with proper dyeing temperatures; otherwise difficulties with fastness are sure to be encountered. Other writers have pointed out the dangerous effects of sunlight on the vat colors while in process of dyeing, which are distinctly a matter of fact, and likewise, streaks in vat colors may come about through leaving the goods hanging too long while taking a sample.

Streaks in direct colors still occur despite the best of care, but these are really so definitely under the control of the dyer that when they occur it may be said that the correct dyeing formula has not been used or followed out. Of all the colors, blues are undoubtedly the most difficult to handle, particularly on mercerized yarn, and for a long while it seemed impossible to do anything with them, especially in light shades, but as blues are a popular shade and as dyemakers seemed to be content to put out the same brands that they had served up for the last 20 years, something just had to be done about it. Blue shades are very generally dyed, and from what I can see they seem to be much more level now than ever before, so probably every dyer has worked out the problem to his own satisfaction. Blues seem to be one type of color that has to be boiled before salting, yet by far the best results would seem to be obtained if a little of the salt—not enough to cause any appreciable exhaustion—is added before the temperature is brought above 140 degrees F.

All dyestuffs seem to be mixtures, not in the sense that union blacks are, but mixtures of isomers or closely related chemical compounds with slight differences in dyeing affinity. Addition of the very small amount of salt while the temperature is low insures that if any easily excitable components are present that they may be eased onto the fiber before the temperature is high enough, so that they will not jump for the fiber when large additions of salt are made. An addition of soap and tri-sodium-phosphate to the bath is very efficacious with these blues.

# Carding, Spinning and Modernization Discussed at Atlanta Meeting

THE Georgia mill men, joined by a large number of visitors from Alabama and the Carolinas, had the largest crowd on record for their meeting in Atlanta last month. Based on a prepared questionnaire, a list of practical mill topics covering carding and spinning formed the discussion part of the program, and a provocative address on the importance of modernization was made by a leading southern engineer . . . . . .

CARDING and spinning discussion, and an excellent address on the subject of modernization, featured the spring meeting of the Textile Operating Executives of Georgia, held at the Georgia School of Technology, Atlanta, Ga., on Saturday, March 16. The largest attendance of mill superintendents and department heads in the history of the organization—coming mainly from Georgia, with visitors from Alabama and the Carolinas—was on hand. R. D. Harvey, superintendent, Pepperell Mfg. Co., Lindale, Ga., presided as general chairman. J. C. Platt, agent, Aragon Mills, Aragon, Ga., was elected to a 2½-year term on the executive committee, succeeding D. R. Senn, whose term expired with this meeting.

Louie D. Newton, pastor, Druid Hills Baptist Church, Atlanta, opened the meeting, following the invocation by John H. Hampton, with a brief inspirational address. The chairman next called upon J. M. Shelton, vice-president, Robert & Co., Inc., architects and engineers, Atlanta, who spoke on the subject of Modernization, saying in part:

## Modernization, by J. M. Shelton

"My brief remarks on Modernization will not be primarily a discussion on the merits of purchasing new machinery to replace the obsolete, but will deal with the subject in a more personal way, namely, the proper relationship between the superintendent and the executive management in formulating and carrying out of a modernization program in a mill.

"To a gathering of operating executives, modernization is a peculiarly appropriate subject for the reason that competitive conditions in the industry today will not permit the continued operation of so-called obsolete machinery. Five years ago, a speaker with the subject of modernization would have had hard going—for the reason that the topic would have been considered more or less a theoretical one. Today it is different. Whether we approve of all of the improved machinery that has been put on the market in recent years, we cannot erase, with a wave of the hand, such accomplishments as: One-process picking, one-process drawing, long draft roving, long draft spinning, high speed spooling and winding and warping, high speed looms, high intensity lighting, high duty humidification, and overhead air cleaning systems.

"The industry should feel proud of the fact that it has sponsored the achievement of such major improvements in so short a time; however, it must not overlook that tragedy that confronts those that have not been able to stay in the race. On account of the swiftness with which the radical changes in textile machinery have been accepted and adopted, many mill men are not yet aware of the tragic future that awaits any mill that is not able to adopt and carry out some kind of modernization program.

"I make this statement advisedly because in the course of my business activities I have had occasion to become familiar with the savings in operating costs that have accrued to mills that put in one-process picking, long draft spinning, high speed spooling or winding and warping, high speed looms and overhead air cleaning systems. During the past two or three years a number of the larger mills have been systematically and without publicity replacing obsolete equipment with modern machinery, until they are now in a competitive position to meet any kind of normal competition.

J. M. SHELTON, vice-president, Robert & Co., Inc., who spoke to the Georgia meeting on the subject of Modernization . . . . . .

"If modernization is so vital to the future success of any mill, you may ask why haven't all mills adopted a modernization program. Here are some of the reasons:

"In a few instances an old established yarn mill or a tire cord mill has discovered that it no longer has a market for its product, due to radical changes in styling or other basic changes in the use of its product. Such mills have postponed carrying out a major modernization program until they could determine whether it would be advisable to completely reorganize their mill for the manufacture of another type of product.

"Other mills of the ultra-conservative type have not been willing to accept the radical changes in textile machinery until there was a proven record of satisfactory service back of the new machines. This is of

Reported by Robert W. Philip.

# PERHAPS THIS WILL TELL YOU WHY GOODYEAR BELTS LAST 2 TO 10 TIMES LONGER

*Dynamometer test measures efficiency—helping Goodyear build better belts*

IN THE Goodyear Development Laboratory stands a huge machine with a control panel almost as large and complicated as that of a radio station. It is known as the 100 H. P. Dynamometer—but it ought to be called the belt buyer's best friend.

For it has contributed in no small way to Goodyear's ability to build belts that often deliver up to *ten times longer* service than other makes, especially on heavy duty drives.

### Duplicates actual service conditions

This ingenious belt-testing dynamometer has not only made it possible to duplicate, in the laboratory, the most severe operating conditions—from the high speed, mile-a-minute drives on flour mill grinders and paper mill rag cutters, to the heavy loads encountered on oil well powers, rock crushers, beaters, etc.—*but it actually measures the efficiency of a belt by recording its slip and power capacity under any combination of speed and load, or overload.*

But what interests you is that these tests have enabled Goodyear to ferret out the weak points—to make belts more nearly stretchless—to increase power capacity without increasing size and weight. In short, to develop better belts for every type of drive.

The best proof of that is typical records like these: *Goodyear* THOR *Belts cut belt costs 50% on beater drives in mid-west paper mill!*

*Goodyear* COMPASS *Belt gave seven times longer service than best previous belt on southern oil well pump drive. Goodyear* TRANSMISSION *Belt now in 13th year of service on eastern cement mill rock crusher drive.*

### Job-fitted by G.T.M.

Goodyear Belts will give you this same cost-reducing service because they are correctly designed for your particular operation—and because the right type and size of belt is correctly specified for it by the G.T.M.—Goodyear Technical Man.

For more than 20 years this practical belting expert has been the right hand man of American Industry on all belting matters. Never was his experience, and Goodyear's proven leadership in belt design, so important as in these days of rising costs.

To consult him, write Goodyear, Akron, Ohio, or Los Angeles, California—or the nearest Goodyear Mechanical Rubber Goods Distributor.

BELTS • MOLDED GOODS
HOSE • PACKING
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

GOODYEAR

course a good policy generally, but waiting for further proof would be carrying the idea to an extreme.

"Still other mills, and this group is in the majority, have postponed a modernization program on account of the lack of proper finances or a strong faith in the immediate future of the industry.

"Due to the key position that the superintendent occupies in the operation of a textile mill, I should say that the burden of sponsoring a modernization program rests upon him. Long before the management spots the reason for high costs, the superintendent sees the effect of obsolescence and inefficient machinery in his daily rounds through the plant. It therefore becomes his responsibility to keep the management informed as to the condition of the machinery and equipment and to recommend at the proper time the replacement of obsolete machinery.

"Every superintendent knows that it takes more than a mere request to get the management to make a purchase of new machinery. In some instances, a few statements as to the advantages of a particular machine will represent all the selling that is necessary to get your equipment, however, as a general rule, any request for the expenditure of large sums of money meets with active resistance. This attitude on the part of a treasurer may be normal as it is his responsibility to disburse only when spending will produce a profit.

"Whether a superintendent's program or request for modernization goes through or not, he can be sure

R. D. HARVEY, superintendent, Pepperell Mfg. Co., Lindale, Ga., who, as general chairman, presided at the Textile Operating Executives meeting

of his reward if he charts the following course:

"1. Be accurately informed as to the exact condition of his equipment and its relative efficiency as compared with new machinery and processes. This can be done by personally making periodic inspections of the machinery and substantiating your statements concerning efficiency with written figures on actual performances.

"2. If the various processes in your mill are not properly arranged, be able to make definite recommendations concerning corrective measures. Excessive costs should be proved by actual cost figures compared with savings effected by proposed changes.

"3. Before recommending the purchase of new machinery, prove to yourself the operating economies to be effected. This can be done by checking actual speeds, labor costs, etc., with proposed speeds and costs.

"In working out a modernization program, other factors besides the purchase of textile machinery should be carefully considered. Too often a superintendent accepts a poorly arranged and inefficient machinery lay-out, not realizing the penalty he is paying for so doing. The unit of cost in a textile mill is sometimes very small, running into as many as four decimal points, but since the volume going through a mill usually runs into the thousands or millions of pounds, any penalty, however small, can become a major handicap. Quite frequently a little ingenuity on the part of the superintendent (or textile engineer) can correct a bad lay-out and a modernization program can be started without the purchase of machinery.

"Another item, which does not require the expenditure of a large sum of money, is correct and adequate lighting. In various mills, the management has been able to increase production, reduce seconds and secure lower costs by the installation of a proper lighting system with adequate intensities. So often lighting is overlooked in modernization—yet mills have been able to increase production in a weave room as much as five per cent by increasing the lighting intensities in the room.

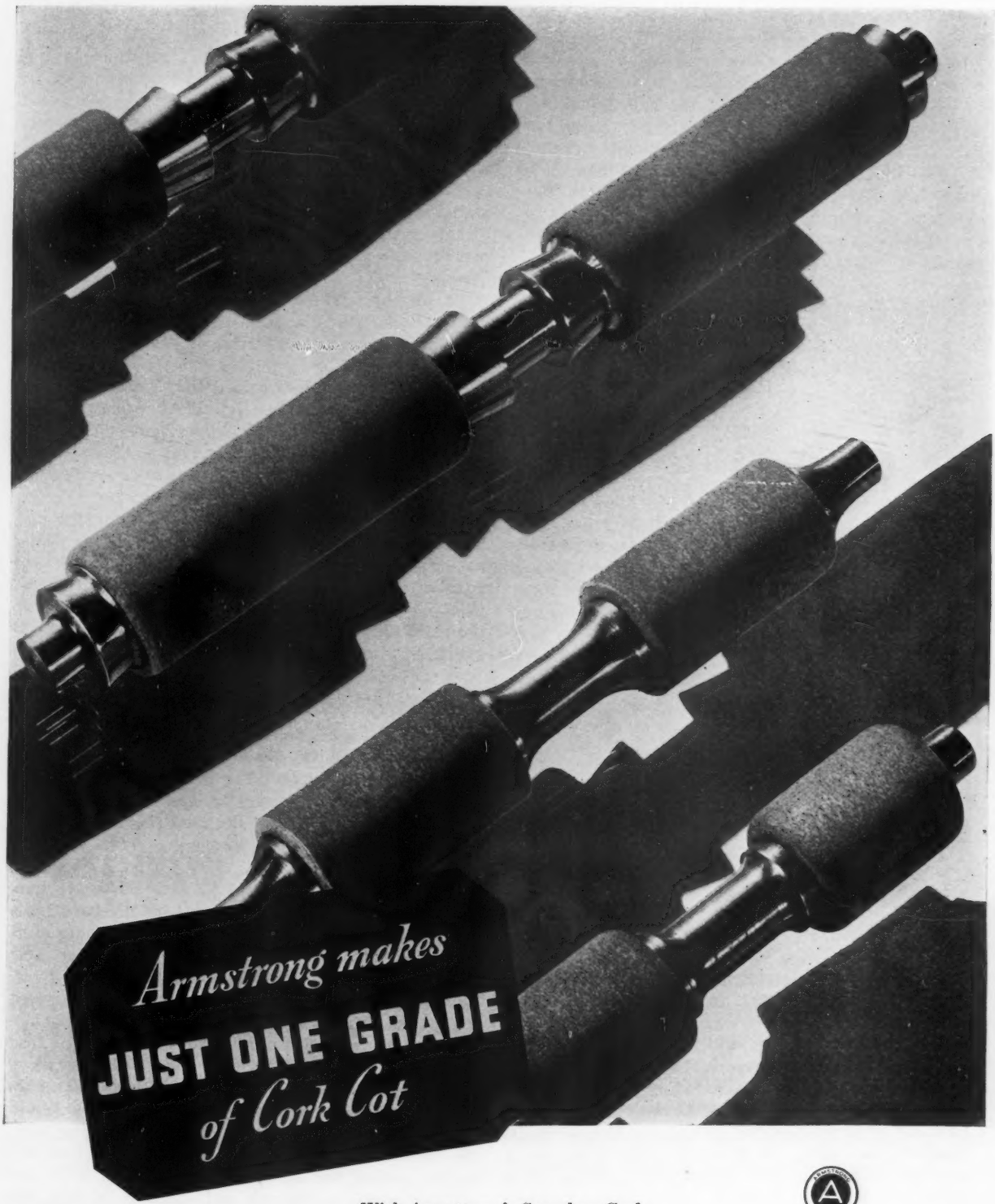
"Another improvement to be considered is the installation of the overhead continuous cleaning system. While considered by some a refinement and expensive equipment, such a system not only reduces the cost of labor in a spinning room, but creates a better working condition for the operator as well. This system has become standard equipment in so many mills, that any mill operating without it is immediately penalized, maybe not much, but penalties in a textile mill are cumulative, and whenever the balance of the scale swings, no amount of individual effect on the part of the superintendent will change the balance.

### More Efficient Personnel a Necessity

"One other phase of a modernization program that I would like to mention briefly—and I say briefly because it is generally considered a forbidden subject—is the changes that are taking place in the management of labor and the mill's operating personnel. Minimum wages and maximum hours are here to stay, notwithstanding anyone's personal feelings in the matter. The advent of these two innovations have put an entirely different light on the efficiency of the individual operator in a mill. In the future, mills are going to be more selective in choosing their personnel and real emphasis is going to be given to efficiency. Already some mills are putting in training schools or departments where the inept man or woman is eliminated or adjusted, and the alert are skillfully trained. A little research in such a department is bound to pay handsome dividends. This policy has proven its merit very definitely in a number of mills.

"A lot of mill men at the present time are very discouraged over the outlook for business in the future, and probably rightfully so, but don't forget that the textile industry is the third largest industry in the world, its successful future is assured, and for the long pull, everyone should be optimistic, particularly those who have already cleaned house and are ready for any upturn in business.

"It doesn't take a prophet to forecast that there will always be a huge market for textile goods in this country. Someone must supply that market. Now is the time for manufacturers to decide whether they will supply this demand and at a profit—or whether they




THERE'S never any variation in the quality of Armstrong's Seamless Cork Cots! They are manufactured in just one grade—each cot is like every other one. And with good reason! These cots are not unfabricated products of nature. They are always uniform because they are a manufactured product, therefore the quality can be exactly controlled.

With Armstrong's Seamless Cork Cots, you are assured uniformity in drafting. A slightly stronger and evener yarn is produced. Hard ends are practically eliminated and there are fewer ends down.

Mills operating "on cork" save from 50% to 75% on roll covering costs. Write today for full information and prices. Armstrong Cork Products Company, Textile Division, 923 Arch Street, Lancaster, Pa.

*Armstrong's*

**SEAMLESS CORK COTS**

***for spinning and card room rolls***

will sit by and take what is left after the well equipped mill has gone home with the bacon.

"There is no question about the demand for goods being always with us. It may not be as large a demand as we need to keep all of the mills running at the present time, but it will be large enough to yield a profit to those that are properly equipped to handle it. The turning point is near at hand. Many mills cannot stand another year like the last, and still have resources enough to modernize for the future.

"If there are too many mills, some must fall by the wayside. The axiom—the survival of the fittest—will settle this issue. If all were on an equal footing as to manufacturing costs, all would starve before a readjustment could take place. The sooner a large number of mills are in a position to make profits at what are now unprofitable prices, the sooner will a solid foundation be laid for a profitable return from textile mill investments."

### Carding Discussion

After Mr. Shelton's remarks, Mr. Harvey introduced A. D. Elliott, who conducted the discussion on carding subjects according to a questionnaire of five topics which had been assigned. The first question was, *"Can the Gyrator type of cleaner be used to supplant the ordinary rake type distributor?"* and the first man answering was J. C. Platt of Aragon, who said, "We have used two types of feeders, one was the regu-

J. C. PLATT, agent, Aragon Mills, Aragon, Ga., who was elected a member of the executive committee

lar belt type which we supplanted with the Gyrator in connection with one-process picking, and the whole lay-out works very satisfactorily. We have been operating it about six months, and we find that the waste taken out is about equal to what we formerly got from our intermediate pickers which were eliminated in going to the one-process system. This waste runs about .6 per cent, and it doesn't contain any white cotton."

J. C. Edwards of Martha Mills reported that while he is not using the Gyrator, he has seen three installations in other mills, all of which seem to be giving satisfactory results. "The type of waste taken out is certainly a fine type of waste, but it doesn't take out any long staple." Mr. Kirby of Willingham mill stated they replaced the belt type distributor with the Gyrator and it gives perfect satisfaction; that it seems to give a more even feed and that the level in the hoppers seems to stay at the proper level better. He said he has a section of Gyrator feeding five hoppers. As to the maximum length of this type of distributor which might be used, Mr. Edwards pointed out that the capacity is about 2,000 pounds an hour, so this would limit the number of hoppers over which one section of this equipment might function as a distributor.

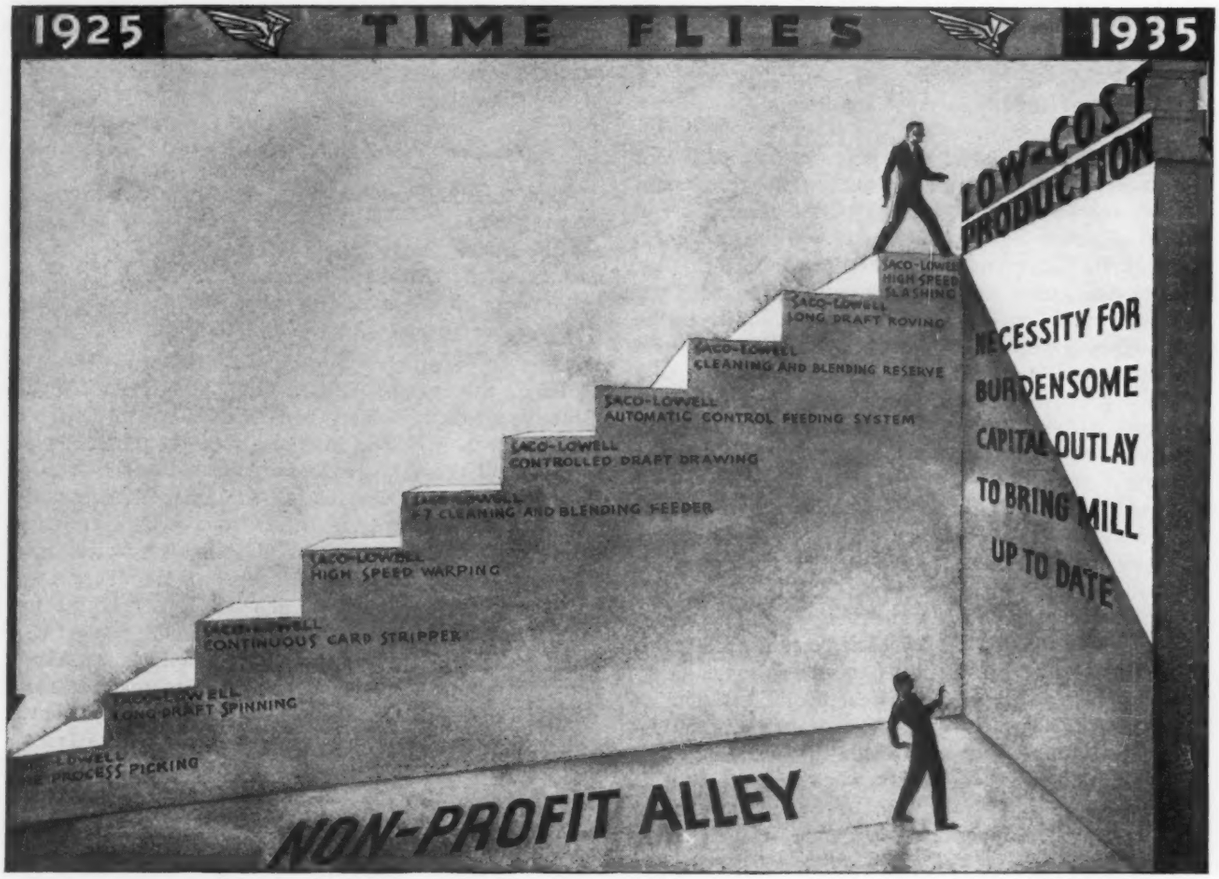
W. A. Hunt, overseer of carding, Meritas Mills, Columbus, Ga., reported they have the Gyrator equipment feeding five hoppers, and it takes out foreign matter which without it would have to be taken out by the pickers. W. E. Rambow, overseer of carding, Sibley Mfg. Co., Augusta, said they run the Gyrator as a distributor on some of their one-process pickers, and find it takes out heavier impurities and foreign matter such as buckles, ties, etc., that go on to the pickers in the line not equipped with the Gyrator—and that the pickers it feeds seem to produce a more even lap.

It was brought out that it is necessary to clean out the Gyrator line by air when changing from white to colored work or vice versa, or from one color to another.

Mr. Platt further explained that, "when we went to one-process picking we felt like we had to have something to take the place of the cleaning previously done by the intermediate picker, and so we added the Gyrator to the line, not replacing any other equipment, and got from it about as much waste as from the intermediate picker previously. Our total waste, through the pickers, is about the same as before putting in the one-process. We have 36 or 38 feet of Gyrator serving four hoppers." It was brought out that this equipment produces no excessive fire hazard, and that sprinkler pipes and equipment are furnished upon installation of the Gyrator.

### Do the End Clips on Card Flats Straighten Out?

There was a brief discussion on the next question, *"What causes the end clip or fastener on card flats to get straightened out? What happens when this clip rides the arch between the flat and the arch? What happens when you grind a flat with this clip straightened out? (Don't say you have none of this until you inspect your cards closely.)"* J. M. Glass, of Shawmut, R. P. Sweeny of Exposition, R. A. Field of Newnan, J. L. Bowles of Fairfax and others discussed this briefly, some reporting having found this condition, it appearing that it shows up mostly on the older style of clip. Others said they had not encountered it. J. C. Edwards, who had suggested the question, stated that "I felt like in view of the fact that only in the last couple of years I had run into that to any degree, that it might be worth considering. A couple of years ago I just happened to be going over the cards and found two of these clips straightened out on one card, and now we have a systematic inspection for checking them. We have concluded that our trouble comes from the square end of the stripper scavenger roll when the stripper picks up the roll and sticks it in from the other end, and hits the clip. We have three different kinds of clips and have this trouble with only one type, the kind that sticks up above the knee of the wire. The question has answered its purpose if it has caused us to think about this thing." Mr. Edwards said they are having the stripper roll tapered at the end to get away from the square end. L. J. Duckett pointed out that if both ends of the clip come out at the same time there will be no trouble except the clip will fall out. If only one end comes out it will ride




# Steer clear of Non-Profit Alley by adopting improvements as they come!

Recently a number of fine old cotton mills have been brought face to face with that steep wall. An investment of a few thousand dollars each year would have kept their plants up to date; but they neglected to adopt machinery improvements as they came along. Through this neglect, the cost of the changes necessary to put their mills on a modern basis became more than they could stand . . . and they closed.

Perhaps no single equipment change makes a vital difference in a mill's operating costs. But in the past few years there have been so MANY improvements and refinements of importance that the cumulative effect makes a decisive difference.

Make it a policy to adopt machinery improvements by easy steps as they come along each year. This will keep your mill in the Lowest-Cost Group and out of the blind alley that leads to either extremely burdensome large-scale capital outlay — or liquidation.

You will find the equipment listed above in today's lowest-cost mills. Not all of it is yet common practice. But the very fact that it is unusual is the reason why its users enjoy unusually low costs.

Information on any of this equipment may be obtained at our booth at the Southern Textile Exposition, or by writing to us.

**SACO-LOWELL SHOPS**

147 Milk Street, Boston, Mass.

CHARLOTTE ATLANTA GREENVILLE

up on the arch and affect the working and grinding of the flat.

### Humidity in the Card Room

*"What is the greatest percentage of humidity that can be carried in the card room without doing permanent damage to the card clothing? Will the work run as well with this great a humidity?"* was the next question. E. H. Rogers, agent, Fulton Bag & Cotton Mills, Atlanta, was called upon, and said, "I think about the only way to find out is to increase the humidity to the point where it damages the cards, and we haven't tried that. We have gone up to 65 per cent. We find that in the dry weather, if the controls are set at 65, they will turn off, but in the wettest weather they will keep running. We feel about 65 per cent is about suitable for this climate." He added that 65 per cent did not apparently damage the card clothing; and that he runs about the same on coarse and lighter numbers, in answer to questions. He has been running about 65 per cent for seven or eight years. C. K. Cobb of Canton, who had proposed the question, said his records showed that during 1934, his card room humidity averaged 64 per cent; that he has seen no injurious effects on the clothing. W. R. Beldon of Clark Thread Co. reported running 60 to 65 per cent with no injurious effects. In direct answer to the question he observed that if the humidity were high enough to damage the clothing, certainly the work would not run

J. C. EDWARDS, superintendent, Martha Mills, The B. F. Goodrich Co., Thomaston, Ga., who led the discussion on spinning. Mr. Edwards is vice general chairman . . . .

well. Harry H. Purvis, Chicopee Mfg. Corp., reported 55 per cent in the card room, saying "we have tried going up to 60 per cent and had trouble and did not see any improvement and went back to 55 per cent. At the higher humidity we found more tags accumulating on the doffer comb."

W. A. Hunt reported that at a previous connection, running 75 per cent humidity in the card room, on low-grade cotton mixed with strips, out of 154 cards in the room he had to replace 40 doffers due to the clothing breaking out from rust, etc.

George E. Glenn, Jr., assistant superintendent, Pepperell Mfg. Co., Lindale, Ga., reported the highest card room humidity. He said, "On white work we run 60 to 65 per cent, and on colored work we run up to 80 per cent. I think you will find no trouble with the card clothing at 80 per cent as long as the cards are running; but of course if you leave it in there with the machinery shut down it will give trouble. We find our colored work runs better with the higher humidity, and have been using it since about 1929." This is on raw stock dyed cotton dyed with sulphur colors. He said they strip by air, and that their humidifiers are of a modern type with fans in the heads to give a circulation of the air. Mr. Jordan of Swift Mfg. Co. reported carrying from 50 to 58 per cent, with no tests higher than that.

### One- Versus Two-Process Drawing

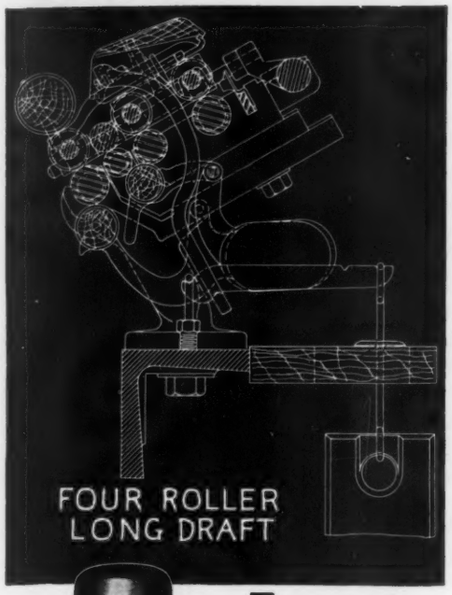
The familiar question of one- versus two-process drawing (meaning the customary type of frame and not the newer controlled draft machine) arose in the next question: *"Please give us a general discussion on one-process drawing and two-process drawing; and why do most people think that two-process will give so much better results than one-process."*

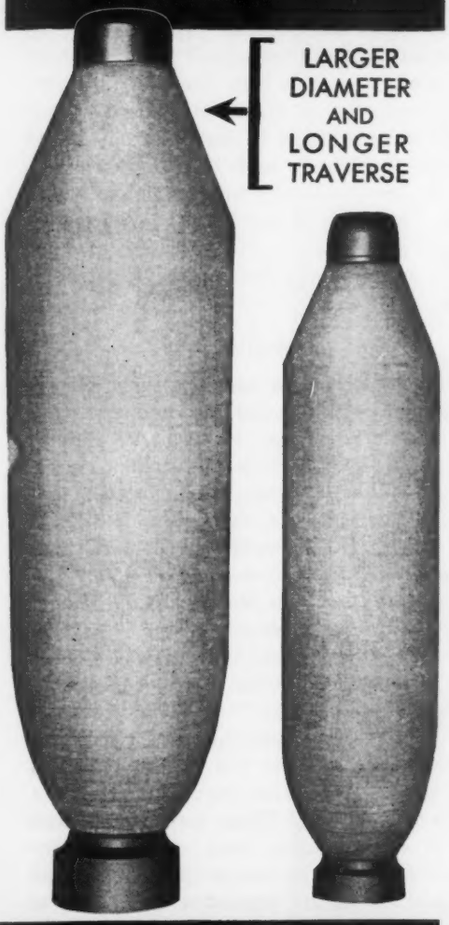
R. P. Sweeny, superintendent, Exposition Cotton Mills, was called on, and said he uses two processes, but has been giving a great deal of thought to one process. "I think a great deal depends on the condition of the drawing frames and the rolls, and the kind of cotton used enters into it. We have been trained to believe that two processes give better results, but lots of our theories have been upset. We are going on long draft, and lots of mills are reporting better breaking strength with decreased doublings. One thing to be said against too many doublings is where you are taking it from one machine to another the roving is likely to be stretched." He suggested that, on one process, the use of a metallic roll in the front line and cork on the rest would produce a more uniform tension than with all metallic rolls. He pointed out also that if it were possible to operate on one process, a saving in cost could be effected.

Henry Robinson, assistant superintendent, Columbus Mfg. Co., reported a recent test made, running one-process drawing in comparison with two processes, and that the Saco-Lowell sliver tester showed 50.11 per cent variation in the sliver from one-process, and 41 per cent in the sliver from two-process, or an increase of about 9 per cent in variation in the one-process sliver. He said they did not cut the speed of the frame on one process in making this test.

Frank L. Asbury, Jr., Hillside plant of Callaway Mills, LaGrange, reported that some time ago they cut their drawing speed from 425 r.p.m. to 260 r.p.m., and went from two to one process, and got a better breaking strength, but implied this was due largely to the reduction from the excessive speed previously run. W. W. Becknell, overseer of carding, Thomaston Cotton Mills, said he got just as good results as from two processes by cutting his speed from 300 r.p.m. to 150 r.p.m. and using one process. J. L. Bowles, of Fairfax, said personally he likes the idea of one-process, but could not produce roving with it that would be satisfactory to the finishing department. He said that his breaking strength went up four or five pounds in using one process, but that this yarn compared on a blackboard at the slasher with yarn from two processes showed up badly and was too uneven. "But I think there is something we haven't hit on about this one process yet, that will make it all right."

Mr. Edwards reported a similar experience—that with one-process, the breaking strength goes up, but you cannot get the same evenness as with two. Mr. Bowles added that in his test he had cut the speed from 400 to 210 r.p.m., but could not hold up the qual-




H&B

# 3 FEATURES that make MODEL B *the* last word *in* SPINNING ECONOMY

THE H & B MODEL B Spinning Frame, equipped with Four Roller Long Draft, Extra Large Rings, and Extra Long Traverse, is the last word in modern, low cost spinning. The large package reduces doffing costs to a minimum while the four roller long draft reduces card room costs.

The H & B Four Roller System of Long Draft makes a better yarn. This system allows for the natural positioning of the fibres. The bite of the second roll is not carried so near to the front roll as are the belts in other systems, so that "plucking" is prevented. Also the longer fibres are drafted to form the core of the yarn, where they have less tendency to break up into shorter fibres.

Year after year continuous running is maintained the same as in regular spinning. This machine is equipped with Traversing Thread Board, Extra Duty Spindles and High Speed Rings.

The Model B Frame is now being installed in mills where cost studies have shown it to be the answer to present day spinning problems. Let us demonstrate that it can be successfully applied to your problems.

## H & B AMERICAN MACHINE COMPANY

*Cotton Preparatory and Spinning Machinery*

PAWTUCKET, R. I.

BOSTON OFFICE • 161 Devonshire Street
ATLANTA OFFICE • 815 Citizens & Southern National Bank Building

# MODEL B SPINNING FRAME

ity. Mr. Duckett said, "We ran osnaburgs, 50 per cent strips, on one process for several years and put in two processes and was able to slow them down, and it gave us much better evenness and the breaking strength went up 15 per cent."

H. H. Willis, dean, textile department, Clemson College, commented on a test made by R. L. Lee, Jr., for the Textile Foundation regarding size variation in yarn manufacture, which he said brought out that one-process drawing sliver is more uniform inch-for-inch, but that yard-for-yard, the second process showed up more even. Mr. Duckett brought out that he had found that card sliver, inch-for-inch, is more even than the first drawing sliver.

### Tension on Individual Drawing Ends

The final carding question was, *"Please give us your experience as to uniformity of tension on individual ends on drawing frames, with metallic rolls; and describe any satisfactory means of improving tension. Compare if possible tensions on metallic rolls with tensions on leather or cork top rolls on drawing frames."*

J. I. Alford, assistant superintendent, Covington Mills, Covington, Ga., who had asked the question, discussed it. He said they had installed a new set of metallic rolls which produced no more evenness than his original metallic rolls, but that with a set of cork rolls, he did not have to change the tension gear 1/10th as much as on the metallic. He decided that the leather is a non-conductor of heat, whereas two metallic rolls together make a good conductor, which would cause more variation resulting from changes in weather conditions on the metallic.

Harry Purvis reported that they use only cork rolls on drawing, and he and his overseer said they never have to change a tension gear on the drawing frame, or anywhere else in the card room. W. R. Beldon brought up that the matter of trumpets has a lot to do with tension, and suggested that anyone bothered with varying tension use a tapered gauge to check the size of card and drawing trumpets.

R. A. Morgan, Cedartown, Ga., reported a preference for leather rolls on drawing on quality goods, declaring they give a more even tension. He said he had improved the tension further by having the cots cut straight rather than spirally. "I am highly in favor of varnishing the leather rolls," he said, "and using the best calf skin and a good flannel underneath." He added that the gears on a drawing frame are of such coarse pitch that it is difficult to get an idea adjustment; that if the sliver is being strained between the bite of the roll and the calender roll, the gear pitch does not permit a sufficiently delicate adjustment to get the tension right, suggesting these gears might be made with finer pitch. He concluded by saying that there are some purposes for which metallic rolls are all right, but that to produce quality yarn he prefers leather.

Concluding this discussion, J. C. Edwards said he wanted to place before the men a thought for further consideration. He explained by sketch that if the distance from the edges of the web of sliver coming out from the rolls to the calender rolls is 9 inches, the distance from the bite of the roll in the center of the web to the calender rolls is probably 6 inches. Now, he said, the rolls all turn at the same speed, and that cotton on the edges has got to travel 9 inches while that in the center is traveling 6 inches. If you get the right tension on that central part, the edges are bound to be tighter. How can you get a perfect tension under such conditions?

One man then said his method in correcting differences in tension between individual ends is to "swap" rolls, and many others present agreed they do likewise. H. H. Willis brought out that frequently if one end is running slack, if the clearer is raised it will tighten up; and suggested that those, particularly that have adjustable tops, try this out.

The chairman asked for experiences with the solid wheel traverse grinder, a new development. Mr. Beldon said he had just put one in but that it looks good; that it appears that the surface will last two or three times as long as regular fillet. Mr. Foster of Canton said he has had one four or five weeks, and it looks just as clean now as when it was new, and that it does not get dirty or corrode like regular fillet.

Mr. Elliott then asked for experiences with licker-in grinding machines. Mr. Turner reported that he made one out of an old loom frame and a regular burnishing brush, which he finds puts the teeth back in good shape. He runs the burnisher at a speed higher than that of the licker-in, and in the direction of the teeth. Before burnishing, he said, he straightens out the teeth that are bent. He recommended that others try out the idea. Mr. Beldon said he has found a similar arrangement satisfactory. Mr. Edwards brought out that there is now available commercially equipment for this purpose.

### Spinning Discussion

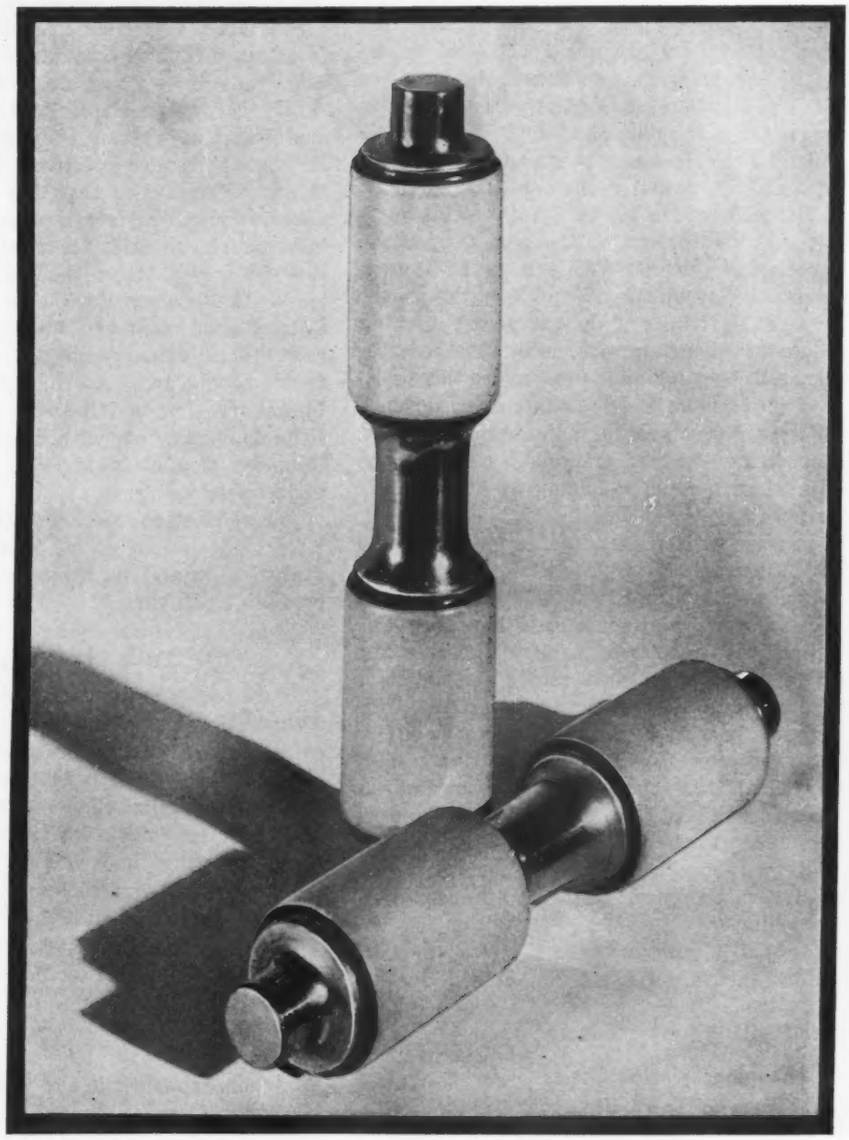
J. C. Edwards took over to lead the short discussion on spinning which concluded the meeting. The first question was, *"What type of overhead cleaner have you found most satisfactory for warper creels? (State what type creel you have, yarn number, and speed of warper. The inquirer wishes specifically to know whether the traveling blower type of oscillating fan type is considered best for a cone creel for high speed warper running 400 yards per minute, 19s warp.)*

J. I. Alford of Covington reported that "we have the traveling type and would like to see it more satisfactory than it is, however, I think it is more satisfactory than the oscillating fan type." He is on 31s warp, with magazine cone creel. Frank L. Asbury, running warps from 4s to 20s, said he put in the traveling cleaner type to replace oscillating fans which, he said, did not keep the creels clean. These fans, which came as equipment on his magazine cone creels, gave no trouble with the oscillating device, he said, but did not seem ample for the cleaning necessary. He said he used three fans on each side of the creel. With the traveling cleaner type, he has a cleaner to each of his three creels. Jack Smith, overseer spinning, Pepperell Mfg. Co., Lindale, said they had recently installed the new type of oscillating fan which is made by the manufacturers of the warpers, and which he believes will be satisfactory. Answering a question, Mr. Asbury said he has no especial trouble with the traveling cleaner blowing up lint off of the floor, since the clean-

# SPINNA CALF . . .

## Drafts Smoothly---Wears Slowly . . .

THE smoothest of drafting is obtained with Spinna Calf; at the same time it wears slowly without the inconvenience and expense of frequently rebuffing or recovering.



*"Fabric Quality Begins With the Yarn"*

A. C. LAWRENCE LEATHER CO.

*Specialists in Textile Leather*

BOSTON, MASS PEABODY, MASS. GREENVILLE, S. C.

ers come around often enough to prevent accumulation on the floor.

### Effect of Roll Size on Breaking Strength

"What effect, if any, results in the breaking strength of yarn by changing the diameter of the front top roll " was the next question. C. K. Cobb, who had submitted it, reported that on the same frame, he had some new cork rolls 1 1/16-inch in diameter, and also some old re-buffed cork rolls 15/16-inch in diameter. A test of several days of yarn from these two kinds of rolls showed that the 15/16-inch rolls made a yarn that was .5 number lighter which broke 5 pounds weaker than the yarn from the larger rolls.

Another question on the list was discussed in connection with this one on roll size, and it was, "In starting new cork rolls which are 1 1/16-inch in diameter and buffing from time to time until they are a shy 15/16-inch diameter, should the rolls be set closer as the diameter gets smaller? Why? Would it be better to turn the cast iron rolls down and use a thicker wall cot and have a better cushion after the last buffing?" The reply of George S. Elliott to this question, read in his absence, was, "This depends upon the length of cotton staple. If 7/8-inch to 15/16-inch staple, I advise closing up the rolls to keep the proper centers for best drafting. I do not advise turning down the diameter of the top rolls, as this method prevents regular roll covering in the future with these rolls should you wish to change back to leather covered rolls."

A. B. Peterson, overseer of spinning at Pacolet, stated that "when we put on cork rolls we had to open up our roll settings, and on re-buffing we have not yet closed them; we have been able to get by. However, I think if you are properly set for any size roll and decrease the diameter, it would certainly injure the running of the work and quality of the yarn."

C. O. Smith, overseer of spinning, Sibley Mfg. Co., reported a test with results opposite to those of Mr. Cobb, stating that a slight increase in the diameter of the roll produced a decreased yarn strength. This increase was made with a calf-skin over a re-buffed cork roll as a cushion. The effective setting was of course changed, though the cap bars were not moved. Mr. Edwards brought out that Mr. Cobb's results were of course contrary to the theory of drafting, because "theoretically, with the larger roll, he should have gotten a lighter yarn by reason of the fact he would expect less 'skidding'."

"When we put in new cork rolls it makes the work weigh lighter," said Mr. Duckett, "but it will get back to normal in two or three weeks. This is with new rolls and immediately after buffing."

### Keeping Spinning Creels Clean

"What can you do to spinning creels to make them shed dirt better?" was the next question. Frank L. Asbury, Jr., reported that "when we put in long draft we rebuilt all of our spinning creels, had them planed down, shellacked, and painted with a special gloss paint which causes them to shed dirt better."

Mr. Edwards pointed out that "it is almost impossible to get good results with the overhead cleaning system without having the creels smoothed up and painted." He said a highly water-proof paint is desirable to counteract the moisture which the cleaners bring from around the humidifiers. Several other men reported shellacking old creels and painting with water-proof, glossy paint.

### Actual Drafts on Long Draft

The final question asked, "Please give us the actual figures as to the average drafts you are running on long draft spinning. State yarn number, size of hank roving, twist, etc." R. D. Harvey of Lindale reported, on 14s to 23s from 7/8-inch cotton, double roving, with 4.75 twist multiple, drafts from 13.6 to 18.4. A. D. Elliott reported drafts of 14.4 to 18.3 on 20s to 36s (some single, some double roving) from 7/8-inch cotton, twist multiple 4.75. R. L. Zachry, reporting for Fulton Bag, said they run 3s to 24s, single roving, from .50 to 1.25 hank roving, with drafts from 6 to 19. They run the 3s waste stock, with a draft of 6, from .50 single roving. Mr. Harvey asked whether the "long draft" system is better, even with this short draft, and Mr. Zachry replied positively in the affirmative. Mr. Edwards commented that this mill is running a large range of numbers from a small number of hank rovings, which, he said, "is a mighty fine thing to do." R. P. Sweeny of Exposition reported drafts up to 18.53 on 23s to 26s warp, double roving. C. Y. Hall, Jr., of Unity Cotton plant of Callaway Mills, reported drafts from 10 to 14 on 7s to 23s, from 1.40 to 4.00-hank double roving, twist multiples from 4.00 to 4.75. Frank L. Asbury, Jr., said he runs 3s to 20s, some single, some double roving, with drafts from 6 to 16. Henry Robinson, Columbus Mfg. Co., reported drafts from 12 to 18 on 4s to 36s.

This question concluded the spinning discussion. After the election of Mr. Platt as a member of the executive committee, the meeting was adjourned just prior to lunch time.

## Let's Have Your Ideas!

Any reader is invited to submit for publication in a future issue his thoughts on any of the subjects discussed at the Atlanta meeting as reported above. The chief value of these meetings, in the minds of many, is the stimulation they provide for further thought and study into the problems covered. Restricted time at the meetings does not permit more extensive discussion. We therefore invite you to take up any subject here reported, make tests and investigations, and send the results of your findings to us.

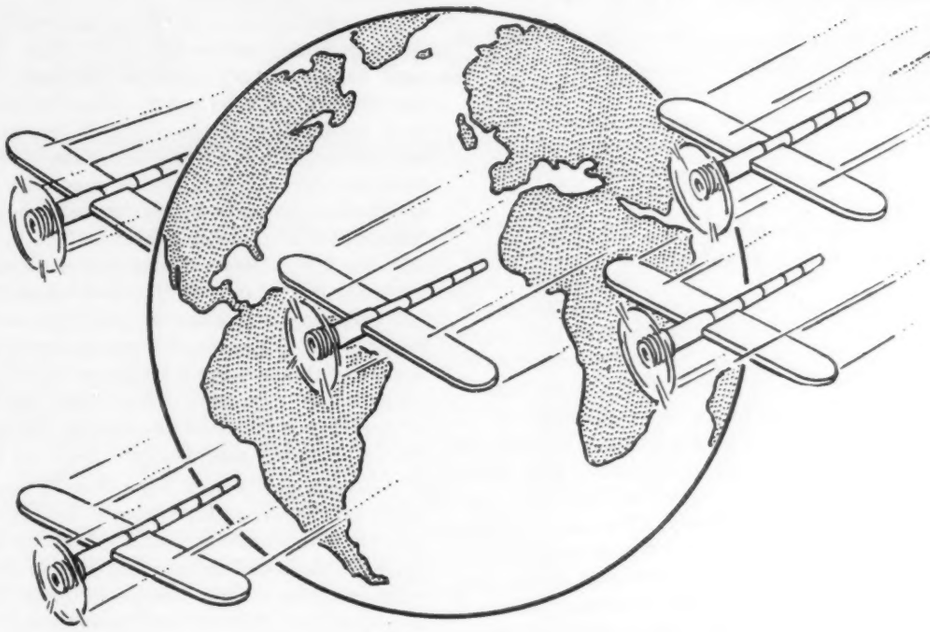
This applies alike to those who participated in the discussions, those who were present and did not take part, and those who were not in attendance at the meeting.

When published in our "How Other Men Manage" department, these contributions will appear either with or without the name of the author, as desired.

We feel that it will contribute to the further interpretation and understanding of these discussions if they are threshed out in detail. and shall be glad to use the discussion department columns of this magazine for that purpose.

The invitation applies of course also to any of the other discussion meetings of this character, by other organizations.—The Editor.

# In 19 Countries



## Type K and Termaco Bobbin Cleaners Save Money for Their Owners

MILL MANAGERS in 19 countries, whose responsibility it is to improve quality and increase production, at lower cost, find that Terrell machines help them to accomplish what is expected of them.

By rapid, efficient cleaning of bobbins; by concentrating waste at the machine, where excess waste can be checked; and by allowing the spinner or weaver to devote more of his time to the improvement of quality, Type K and Termaco machines are indispensable, if increased production at lower cost is to be had.

These money-saving machines are used in the following 19 countries: Argentina, Belgium, Bolivia, Canada, Colombia, Cuba, Denmark, England, Finland, France, Germany, Holland, Hungary, Japan, Mexico, Norway, Russia, Sweden, and the United States.

Numerous cases can be cited to show the savings Terrell machines are making for their owners every year. We name two, one case for each machine:

The Cherokee Spinning Company estimates that by use of Type K they make an annual saving of $3,750.00.

The Termaco Roving Bobbin Cleaner saves for the Exposition Cotton Mills $717.50 yearly.

You can readily see that these machines pay for themselves in a short while and make for their owners a worthwhile profit.

*It will be to your interest to allow a Terrell representative to investigate your needs and estimate, without obligation to you, the savings Type K or Termaco will make for your mill.*

***Visit us at Space 101, Southern Textile Exposition***

**THE TERRELL MACHINE COMPANY, INC.**

**1222 North Church Street, CHARLOTTE, NORTH CAROLINA**

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for* N. Y., N. J., Pa., New England States, and Canada

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*

# CURRENT TEXTILE TOPICS ....

## Talk of the Month

How to do business on a reasonable scale in the face of complicating outside influences has been the despairing problem of cotton manufacturers through the winter and early spring. The gold-clause disturbance was followed by legislative and other factors to disturb the underlying favorable 1935 trend based upon good consumer demand. Thus, while March still held forth hopes of a resurgence of active spring demand for unfinished cotton goods and good mill activity, caution in buying by converters led to the running-out of back-logs and indicated the desirability of curtailment in production.

**Politics and economics make their customary confusion**

Co-operation has been disappointing. The government, under the present Administration, has tried the experiment of playing a leading hand in economics to further co-operation. The partnership which was offered was one designed to leave industry with self-government, but it did not stop there. Unfortunately the mixing of politics with economics is unavoidable when government enters into the latter field and this circumstance always has been productive of confusion. While Congress is convened, industry looks ahead with uncertainty, or worse with apprehension. At the present time, the uncertainty is whether over-reaching experiment will be corrected or whether new ventures into untried fields will further obstruct confidence and thereby delay the recovery that the Administration has striven to promote.

This country has run into a clash in business similar to that long standing political issue of States' rights versus Federal control. There is a new struggle between individual or private corporate rights, all of which in the long run is of vital concern to cotton manufacturers as well as other interests. The oil, TVA, gold and labor court cases of the first quarter of the year have had their direct effect upon the business in cotton goods through that period because they dominated the whole economic picture. The labor case of the Weirton Steel Company is not final on the validity of Section 7A in the NIRA, but it has at least brought a grave issue to a head.

Not only are individual or private corporate rights in the balance, but the business world has been forced to give an inordinate share of its attention to extraneous developments, thus neglecting regular matters of production and distribution. Business men started the year with a promise of unhampered wide activity for several months. The courts have stood in favor of the Constitution in the oil, TVA and labor cases, but business has had little assurance that legislators will not continue to enforce new rash experiments; such measures as the 30-hour week. Thus once more a Congress in session is the greatest stumbling block to a national progress which it is designed to promote.

Under the strain of adversity from the untoward developments, cotton manufacturers not strangely have become weary over the program of government partnership with industry. Leaders of the industry were committed at the start of the program to the essential need of regulation, but as the time approaches for continuation of the NRA there is little enthusiasm because of the imposition of unworkable features into the organization. The original scheme was hastily conceived and over-enthusiastically extended. It remains to be seen whether in the next few months Congress can cooperate within itself to remove the impracticable measures of the program and offer the country a program which will be a real promoter of recovery. The cotton industry will not object to retention of regulation, unless it appears that reasonable modification is out of the question.

Certainly it is high time that the government got back to the idea that private industry under self-government should gradually take up the slack that must be absorbed eventually, to pay for the government program. That was the original idea of the Administration. With a few fundamental principles for sound operation of industry invoked by the government (because they could not be achieved under the old competitive system), the recovery would be well under way according to reliable opinion. As stated already in these columns, the cotton industry if given a fair opportunity to make profits (now precluded by unbearable burdens arising from the New Deal) would contribute to progress in the durable-goods industries. It is estimated that in the various economic fields, one reacting on another, the country is ready to re-employ millions, but only as conditions for investment are made more reasonable and inviting, and government thrift replaces mounting expenditure.

It is an unfortunate circumstance that the cotton industry has run into sectional differences at a time when a united front is needed for the advancement of its welfare with the government. After all the major issues are the common ones of labor relations, the burden of processing taxes, the hours of machinery operation and cotton goods imports. The recent developments have indicated a new Administration attitude toward labor which has allayed fears of the threatened attempt to foment another national strike this spring. A united front against the 30-hour week is more imperative than an effort to secure a single-shift 48-hour week, unless there is a prevailing demand for the latter. All the mills can make common cause on the processing-tax matter.

Hopes and beliefs in the renewal of activity in cotton goods after the elimination of the gold-clause bugaboo were not realized in the succeeding months. An incipient strengthening of values from

# Do You Want These Savings ?

MORE than two million spindles are now enjoying these savings with the CORRECT CONTROL BANDING DEVICE, including such mills as the Cannon Mills Co., Riverside & Dan River Cotton Mills, Greenwood Cotton Mills, Springs Mills, Callaway Mills, Entwistle Mfg. Co., Newberry Cotton Mills, Thomaston Cotton Mills, Orr Cotton Mills, etc. They realized that to secure the most scientific and economical operation of band driven spindles, the band must have the correct predetermined tension, which tension can never be secured by hand tying. It is impossible to tie two specified bands at the same tension by hand with anything approaching accuracy.

A trial of the CORRECT CONTROL BANDING DEVICE proved to these mills that this little device would accurately band every spindle to the same tension—an exact predetermined tension on each spindle, that insured correctly controlled spindle speeds and reduced friction which made possible the savings listed at the right.

You, too, can secure these savings in your mill. We will gladly send full data. Drop us a line today.

COOK - TAYLOR COMPANY, Inc.
6 CLAYTON ST., FALL RIVER, MASS.
SOUTHERN OFFICE:
1906 N. BREVARD ST., BOX 147, CHARLOTTE, N. C.

**SAVE $60.00** on every 1000 spindles each year in power consumption of spindles.

**IMPROVE QUALITY** of all yarn you spin.

**SAVE HALF** your consumption of spinning bands.

**REDUCE** by more than 50% the number of broken ends due to band troubles.

**REDUCE** wear and tear on spindles and bolsters to the minimum.

**ELIMINATE** slack yarn troubles.

**INCREASE** spindle production on current counts of yarns.

**SAVE LABOR** of spinning room employees by reducing stoppages.

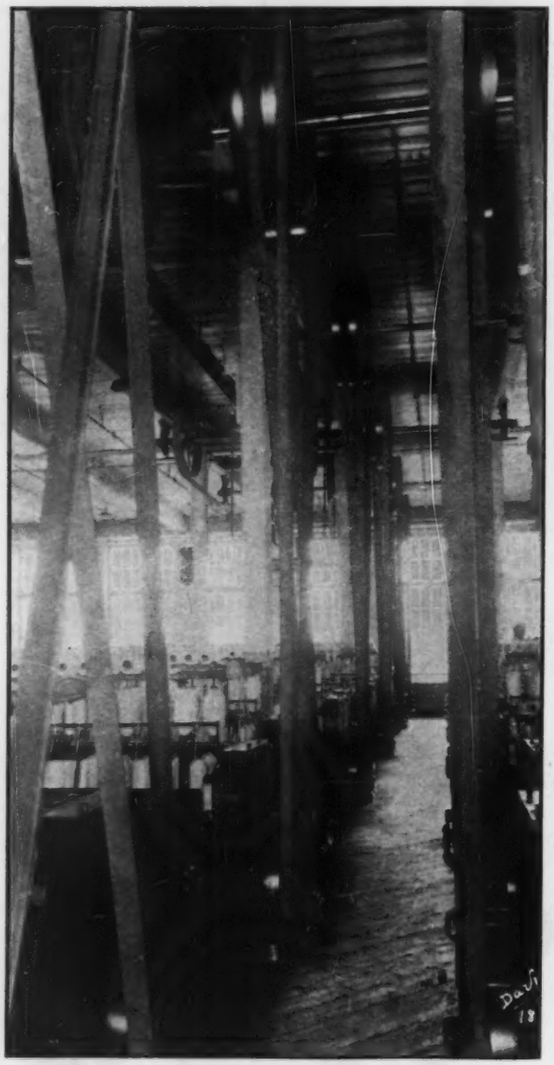
**ELIMINATE** band troubles after stoppage or in damp weather.

# CORRECT CONTROL BANDING DEVICE

*"Every Spindle Band at the Same Tension"*

# THESE BELTS Increase Production at Every Stage . . .

READING TIME 40 SECONDS



● *Goodrich belts applied to this Saco-Pettee spinning frame have been in continuous operation for 5 years and are still in excellent condition.*

**FROM openers to winders you can show a definite increase in production and a decrease in cost, by use of Highflex Jr. Rubber Belts. The reason is easy to see—**

**Made 60% of cotton, these belts naturally stretch less than leather and they can be conditioned in your mill so that they will not shrink. Without stretch or shrinkage, absolutely uniform speed is maintained. Machinery can run at maximum speed all the time, with a definite increase in production at no more cost —and of course that means unit cost is less.**

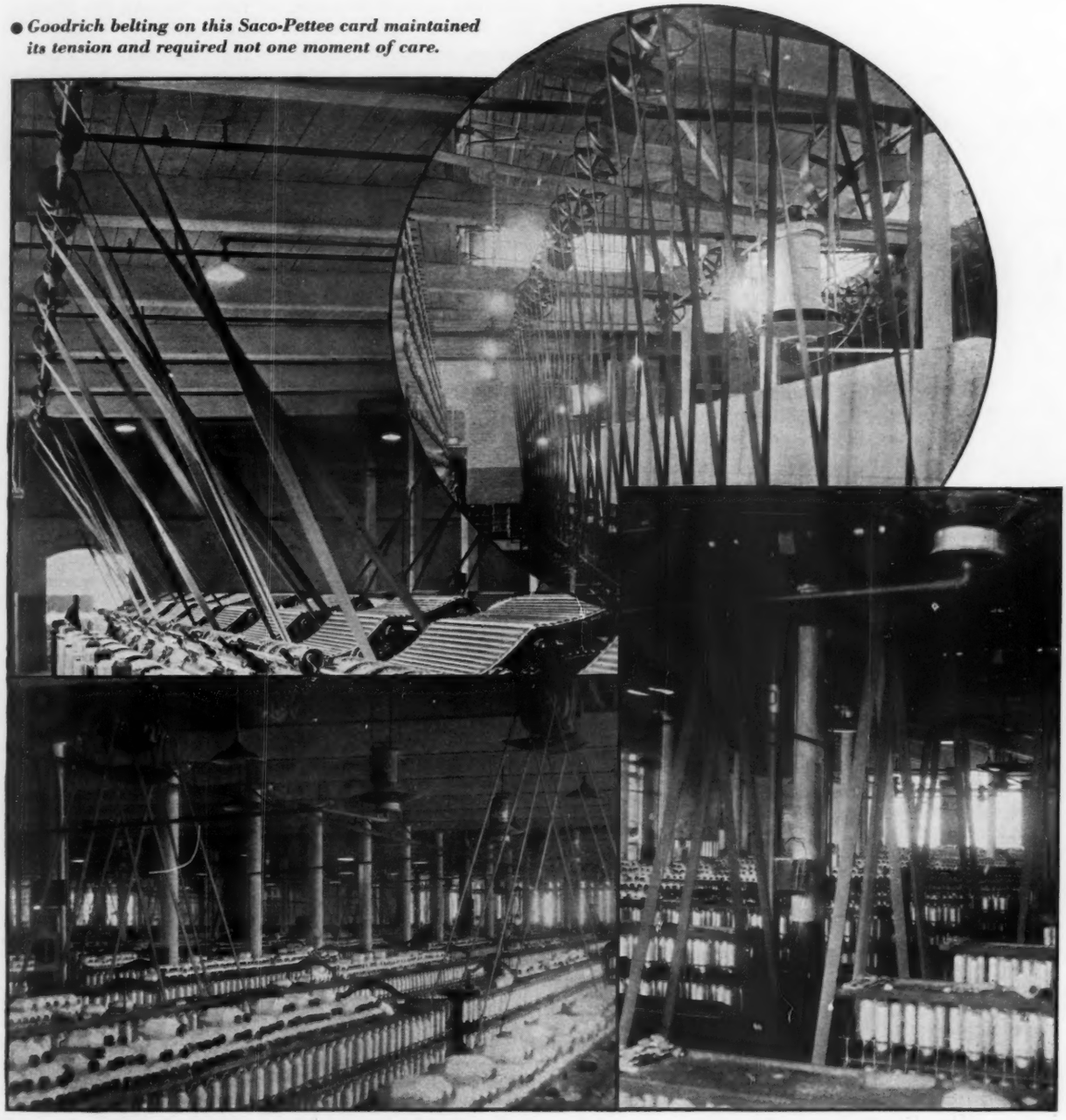
**With less stretch there is less bother, expense and time-loss for take-up. With shrinkage and therefore excessive tension eliminated, drives last longer, quality of your product is better and more uniform.**

**Highflex Jr. belts cost less than leather. They increase production, save machinery, reduce expense so definitely that some mills have found they could throw away leather belts, put in Highflex, and get their investment back 100% in six weeks. Isn't that worth discussing with your Goodrich Distributor? The B. F. Goodrich Co., Mechanical Rubber Goods Div., Akron, O.**

**GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:**

- *Transmission Belting*
- *Spinner Belting*
- *Special Belt for Moist Atmosphere*
- *Multiple-V Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

● *Goodrich belting on this Saco-Pettee card maintained its tension and required not one moment of care.*



● *Part of 15,000 ft. of Highflex Jr. Belting in use at one mill.*

● *Every foot of the belt in this photograph is Highflex Jr., selected because it increases production and reduces cost.*

# Goodrich

# *Highflex Jr. Belting*

ALL *products problems* IN RUBBER

the early lows of the year was followed by renewed weakening of the market and accompanying lack of trading as new uncertainties developed. The month of March advanced with the big centers of production languishing for business in gray cloths and as usual in such circumstances, the lack of stability in prices hung over the market as a factor to intensify the dullness of business.

**New England Mill Situation**

Lack of profitable business in cotton manufacture is again jeopardizing the industry in this district. Today it is not a case where stringent local laws, from which Massachusetts has suffered outstandingly in the past, are causing dismay and serious liquidation. It is the national issues, derived from measures adopted by the Federal government to promote the return of prosperity of the country. But the conflicting phases of the government program have failed to promote first the prosperity of the industry, hence the willingness of mills to contribute large wages and wider employment has reached its limit.

Efforts of the cotton manufacturers of New England—with support of the whole community—are being centered on securing relief from impossible conditions. That they are impossible is clearly demonstrated by the prevalence of losses. Obviously a losing industry cannot continue to contribute to a government program for recovery. On the other hand the government cannot secure general recovery without the support of cotton manufacture and other industries. The burden imposed by government measures under the NRA and the AAA is actually killing off large units of the textile industry and not only is support for the recovery lost thereby but the burden imposed back on the government is added relief necessity.

In spite of the agitation currently headed by the governor of the Commonwealth for relief of the mill industry, the Massachusetts legislature has been considering another destructive restriction in a tax on stock in trade and fixtures. It so happens that this move comes when the Pennsylvania Manufacturers' Association points to Massachusetts—the horrible example—on what to avoid in this direction. It has issued a pamphlet on "The Flight of Capital and Industry from Massachusetts", citing facts and figures to show the "consequences of unsound taxation and uneconomic labor legislation—in decreased employment, diminished wages and increased taxation."

State legislatures will continue to harass the industry, as witness the attempt in South Carolina with the stretch-out matter, but that is not he main concern a present. Rhode Island has been the center lately of the developing disaster to textiles from unsound Federal legislation. Several important units of manufacture have gone by the board so far this year and communities with lost payrolls mounting up into millions of dollars are facing new unemployment of many thousands of workers. Thus the government's recovery program hits another snag and the difficulty is ascribed to processing taxes as one of the three or four broad factors of destruction.

Widespread activity in the centers of textile manufacture in New England, or rather among the State forces now struggling for conservation of their industry, has developed since the Chambers of Commerce started the ball rolling for a concerted plan early this year. A delegation of governors headed by Governor Curley of Massachusetts has been to Washington to stir up the legislative representatives from New England for action against the processing taxes, as well as control of unfair imports, changes in the wage differential and support for export trade. The survey of the cotton industry in New England has been put definitely under way, for a compilation of data upon which to base a sound presentation of the results of disturbing influences.

Mills, meantime, entered the past month with a quiet market but hopes that the momentum of retail business would create a revival of reasonable activity through the spring months. The March backlog was severely reduced and a large number of mills were led to curtail production, both to avoid accumulations and to lessen the pressure on a market already weak in values. One of the proposals arising from conditions of the past year has been the establishment of a 48-hour single-shift schedule basis. It cannot be said that the New England manufacturers adopted any united front on this proposal. At best it would be only a variation in experiment, since no regulated basis has yet been tried under normal conditions. But the suggestion is made in some quarters that it would have a stabilizing influence and would drag buyers away from their hand-to-mouth operations.

## COMMENT ON THE COTTON MARKET

**New Orleans, March 5, 1935.**

With the advent of spring there appears to be a feeling of confidence as to the future in trade centers, yet there is a lack of animation due to various causes, political, financial and uncertainty as to possible developments in Congress. The recent setback to the administration's relief and public works program upset things a bit, resulting in a slowing down in general business. Such delays only tend to create uneasiness at a time when there is so much need of optimism. It is possible, however, that harmony will prevail again soon, which is necessary to permit of the passage of needed legislation in order that contemplated important projects may be put into operation, which would decrease unemployment and increase the buying power of labor.

The present level of farm commodity values is encouraging, and it is believed in some quarters that they, especially grain and provisions, are due to go higher, and with raw cotton quoted at a satisfactory price to the producer, the western and southern farmers appear to be in an enviable position, due largely to the policy of the government as to caring for the tillers of the soil, who are looked upon generally as the backbone of the nation, and deserve protection. Much good is expected to come of this change for the better in the agricultural regions, as it is realized that when the farmer is prosperous, trade conditions in mill and factory districts of the union improve.

There has been much improvement already in the manufacturing sections of the country, and chances favor a further expansion in general business. This is expected to come of further credit expansion, of increasing activity on the farms, of the probability of larger crops this year, and, perhaps, a revival in exports to foreign countries, and possibly by further currency inflation, implications of which are found in late further rise in London gold and silver, which has given rise to rumors of a possible further devaluation of the dollar.

Some lines of trade, nevertheless, have not participated in the recovery in general business that has come about.

*See The*

# NEW BAHAN METAL

*Visit Our Booth at the Textile Show*

## 125-C FIRST FLOOR

**WHILE** in Greenville you are cordially invited to call on us at our plant 104-106-108 Hudson Street.

Any assistance that we can give to the textile men we will gladly do so. Do not hesitate to call upon us.

## BAHAN TEXTILE MACHINERY COMPANY, INC.

*Quality Repair Parts and Patent Attachments for Looms*

**GREENVILLE, SOUTH CAROLINA**

Brokers, exporters, rail and water transportation lines, and dock workers have had little to do, especially as regards handling of American raw cotton for shipment to foreign countries. Why? Largely because American cotton, on which the government placed a loan value of 12 cents per pound on last year's crop, is relatively higher than the price of foreign cotton. Largely for this reason foreign growers have increased their acreage, most of them made larger crops, and undersold American cotton abroad. Naturally foreign spinners used more of foreign production and less of American.

**WORLD'S CONSUMPTION OF COTTON FOR SIX MONTHS, ENDED JANUARY 31ST**

| Approximately— Bales— | This season | Last season |
|---|---|---|
| American | 5,883,000 | 7,100,000 |
| Foreign | 6,501,000 | 5,602,000 |
| All kinds | 12,384,000 | 12,702,000 |

**WORLD'S APPROXIMATE STOCK OF COTTON ON JANUARY 31ST**

| Bales— | This year | Last year |
|---|---|---|
| American | 14,363,000 | 17,207,000 |
| Foreign | 11,365,000 | 11,673,000 |
| All kinds | 25,728,000 | 28,880,000 |

**AMERICAN COTTON**

| Aug. 1st to March 1st— Bales— | This season | Last season |
|---|---|---|
| In sight (marketed) | 7,838,000 | 10,984,000 |
| Exports from U. S., incl. Canada | 3,391,000 | 5,697,000 |
| Spinners takings (world) | 6,959,000 | 9,380,000 |
| Stock at all U. S. ports, Mch. 1st | 2,573,000 | 3,371,000 |

**WORLD'S VISIBLE SUPPLY OF COTTON, MARCH 1ST**

| Bales— | This year | Last year |
|---|---|---|
| American | 6,487,000 | 8,284,000 |
| Other kinds | 2,067,000 | 2,264,000 |
| All kinds | 8,554,000 | 10,548,000 |

No decided change in the export situation is probable until the American government sees fit to change its policy as to cotton. Lately there were rumors that the government might retire its very large holdings of cotton from the market indefinitely. If this was done, and if no loan value was placed on the next American crop, world cotton markets would likely gradually adjust themselves, the demand for American cotton would probably increase, exports would be apt to broaden, and the spot and future markets would become more active and most likely assume their normal position in time.

There has been much confusion in the markets as result of the further advance in London gold and silver, which has served to revive talk of probable currency inflation. The further depreciation of the pound is thought in some quarters to be a move by the British government to better its position to compete with the depreciated Japanese yen in world trade, as Japan has been doing a record business in exporting of cotton goods. While further credit inflation is probable, late unofficial press advices are to effect that there will be no currency inflation under the Roosevelt administration.

New York advised recently: "Doubts arising from legislative and NRA proceedings in Washington that began to be troublesome in mid-February have spread quite widely in primary textile markets. It is believed that they will begin to dissolve before the middle of this month, by which time there must be a larger movement of goods for spring."

Planting is reported backward in the Southwest, mainly because of the risk of replanting, and owing to the dearness of seed. There is the claim of the need of more moisture in parts of the western belt, particularly in west Texas and the panhandle. Elsewhere in the belt preparations are reported as about normal. Sales of mules and fertilizer are large, and a larger acreage is anticipated.

Fertilizer tags sold in Cotton Growing States for seven months, from August 1 to February 28, officially reported by Agricultural Bureaus and State Boards to the New Orleans Cotton Exchange:

| Year— | 1935 tons | 1934 tons | 1933 tons |
|---|---|---|---|
| Ten states | 996,350 | 916,163 | 466,050 |

Recently the AAA announced the tax-free quota for the coming season would be 10,983,000 bales to which must be added about 700,000 bales of carry-over of tax-exempt certificates from this season, which makes a total allowable this year of around 11,700,000 bales.

## What the Southern Mills Are Doing

The Firestone Tire & Rubber Company have purchased the Loray plant of the Manville-Jenckes Company, at Gastonia, N. C. This large plant of more than 150,000 spindles was placed on the market in liquidation some time ago by the owners, along with the company's weaving plant at High Shoals, N. C., which was not involved in the Firestone purchase. It is understood that Firestone will immediately begin revamping of the Loray mill, putting it into condition for the manufacture of tire cord for use in their tires. Robert & Co., Inc., Atlanta, Ga., architects and engineers, handled the sale of the property to the Firestone interests.

The entire structure of the Calumet LaGrange unit of Callaway Mills, LaGrange, Ga., is being completely renovated. A new picker division and storage department have been added, and a rope and braider division. In the winding department, six new twisters and several winders have been installed.

Carolina Cotton & Woolen Mills Co., Draper, N. C., and Goodyear Clearwater Mills, Atco, Ga., are among those recently utilizing the Guillett system of overhauling machinery.

Henry River Mills, Hildebran, N. C., are erecting a one-story brick addition, 30x104 feet, to be used for enlarging the productive capacity of the plant.

A charter has been granted to Anderson Weavers, Inc., Anderson, S. C., for textile manufacture. E. A. Hill and associates are the organizers.

Springs Cotton Mills, Chester, S. C., recently purchased 2,500 feet of steel fence from the Stewart Iron Works.

Dr. O. J. Corpening of Granite Falls, W. L. Long and E. E. Carpenter, of Gastonia, have purchased the Patterson Mill, Patterson, N. C., and plan to re-open it soon.

D. E. Converse Co., Glendale, S. C., and Clifton Mfg. Co., Clifton, S. C., have installed new equipment in their power plants.

Bedford Weaving Corp., Bedford, Va., has awarded contract for alterations and improvements at the Bedford-Armstrong plant which the company recently purchased. Machinery will be installed for weaving rayon and acetate cloth.

North Carolina Silk Mill, Burlington, N. C., have purchased an H-W rayon conditioner made by Industrial Dryer Corp.

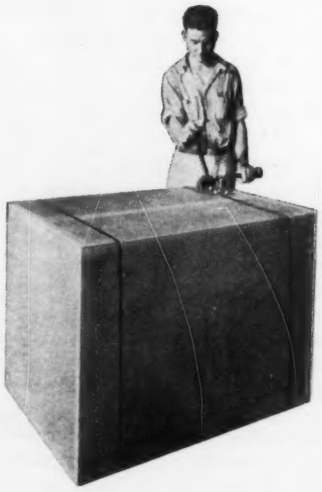
Thompson Hosiery Co., Graham, N. C., has been organized under the direction of J. A. Thompson of Burlington. Forty machines, of the HH spiral 25-step type, have been installed, to manufacture men's half-hose.

Jack Burn, of Niota, Tenn., and Robert Sizer, Edwin Sizer, Harvey Burn and Dr. Joseph Sizer, of Sweetwater, Tenn., have purchased the O. V. B. Knitting Mill of Spring City, Tenn.

High Falls Mills, Inc., High Falls, N. C., have been granted charter to manufacture and sell hosiery, knit goods, etc.

The machinery of the Whitehead Hosiery Mills, Burlington, N. C., has been moved to the plant of the Hollar Hosiery Mills, which purchased 78 machines, the Whisnant Hosiery Mills, which purchased 72 machines, and the Brown Hosiery Mills, which purchased 30 machines. All of these plants are in Hickory, N. C.

# My ACME STEELSTRAP Treatments are helping hundreds of TEXTILE SHIPPERS



*Two applications of Acme Steelstrap make this big case snug and strong. Now, it's safe from ordinary damage, and pilferage is discouraged.*

Shipping methods become better, more efficient, for textile people when Acme Steelstrap is correctly administered to their big "packages."

Sometimes I prescribe two administrations of this slender reinforcing band. In other cases, several are required.

But, in any case—Acme Steelstrap can be applied faster, can provide maximum protection to shipments, insure a neat and attractive package, and the arrival of the goods in A-1 condition.

Hundreds of mills throughout the country have Acme Steelstrap on their permanent payroll, for reinforcing big fibre cases, wood cases (often reducing weight, here)—and under the name of Bale Ties, better looking, more securely bound bales are obtained.

I'll be glad to check your present shipping methods. And I'll send you a set of tools, seals and strap—to try yourself.

Doc. Steelstrap

Acme Steelstraps

**ACME STEEL COMPANY · GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO**

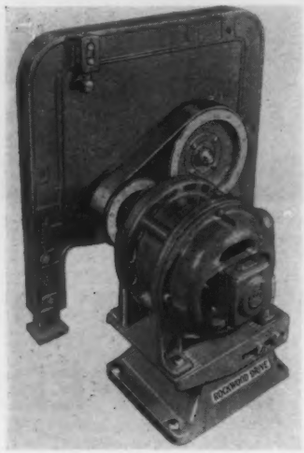
ATLANTA NEW ORLEANS SAN FRANCISCO BOSTON BROOKLYN

# NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

### Three New Rockwood Spinning Frame Drives

Rockwood Manufacturing Co., Indianapolis, Ind., have announced production of three new Rockwood drives for spinning frames. The large number of standard floor mounting bases in use suggested to the company's engineers that many improvements and refinements could be incorporated in a special base, made for this one use only.

Each of these three drives is practical, it is explained, proven in extensive mill operation. Illustrations are shown herewith of the three types. In

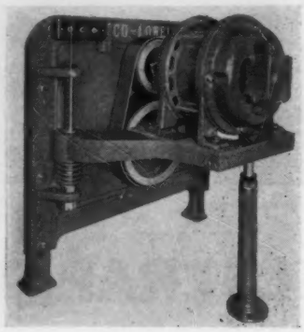


Spinning drive—type 1

No. 1, the base is constructed so that the motor is mounted eight inches off the floor. Simple adjustments establish correct belt tensions and quick pulley alignment when the drive is installed, it is pointed out. The pivoted motor weight assures uniform transmitting capacity throughout the life of the drive. The driven pulley speed is maintained and the power input favorable. This is called the floor mounting.

The No. 2 type is the Rockwood drive shelf type spinning frame drive for use where shelf or bracket mounting for motors is preferred. The pivoted motor base is recessed in the welded steel shelf, for neat appearance and sturdy installation. The motor is eight inches off the floor. The shelf is designed for a minimum of space and ease of cleaning.

The No. 3 type is the vertical Rockwood special spinning frame base, em-



Spinning drive—type 3

ploying the Rockwood vertical drive principle. The motor is mounted above the driven pulley to give maximum clearance from the floor and to permit wide range in the selection of pulley sizes, belt lengths and driven speeds. Correct belt tension is maintained by rugged springs beneath the motor shelf. The drive is reversible without any change or adjustment. The design of the base acts as a guard around the drive to keep operators away from the moving belt and pulleys. Speed changes are accomplished by changing only the driven pulley diameter.

Spinning drive—type 2

* * *

### Booklet on Short Center Drive

E. F. Houghton & Co., 240 West Somerset St., Philadelphia, Pa., have prepared and are distributing a booklet entitled "Vim Short-Center Drive with Vim Tred Leather Belting". It describes the company's Vim Tred belting and its application on drives of this type. The company has also available a complete handbook on short-center drives, containing specifications on over 5,000 drives at every speed and pulley ratio up to 1 to 6.

### Colloid Mill Catalog

Chemicolloid Laboratories, Inc., 44 Whitehall St., New York City, have just published a catalog describing "The Charlotte Colloid Mill", representing the results of ten years in designing and perfecting the colloid mill, and also a like period of laboratory research and field operations. All models are adequately described in blueprint and other manners, and included is a list of products upon which the mill operates. Full instructions for its use and a list of users completes the booklet.

* * *

### Lukens Steel Booklet

Lukens Steel Company, Coatesville, Pa., have issued a new booklet entitled "World's Largest Plate Mill and Its Products", which is a pictorial summary of the work of Lukens Steel Company and its divisions, By-Products Steel Corporation and Lukenweld, Inc.

* * *

### Strides in Belt Manufacture

A new folder issued by The B. F. Goodrich Company, mechanical division, Akron, Ohio, lists fourteen different improvements in belt construction which have been effected during the past five years. Six of these are improvements in manufacturing process, four in fabric used, and four in rubber compounds. There are 24 illustrations, taken from a wide variety of industries, showing proven applications of rubber belt.

* * *

### Catalog of Temperature Controllers

Taylor Instrument Companies, Rochester, N. Y., have issued a new edition of Catalog 56R covering the Taylor "Fulscope" Temperature Controllers, for temperature and combined temperature and pressure. The booklet illustrates and describes the various types of controllers in the line, with technical data.

* * *

### Chain and Sprocket Catalog

The Baldwin-Duckworth Chain Corp., Springfield, Mass., has issued Catalog K-1, on chains and sprockets for power transmission, conveying and elevating. It describes and lists the company's standard roller chains, parts and attachments; multiple roller chains; extended pin chains; non-corrosive chains; block chains; cable or leaf chains, special purpose chains; steel replacement chains, sprockets for roller chains, etc. A special feature is a 20-page section devoted to practical engineering data for chain users, including rules and formulas for determining chain size, length, pitch, sprocket diameter and ratios, etc.; rules for installation, alignment and operation; lubrication methods, etc.

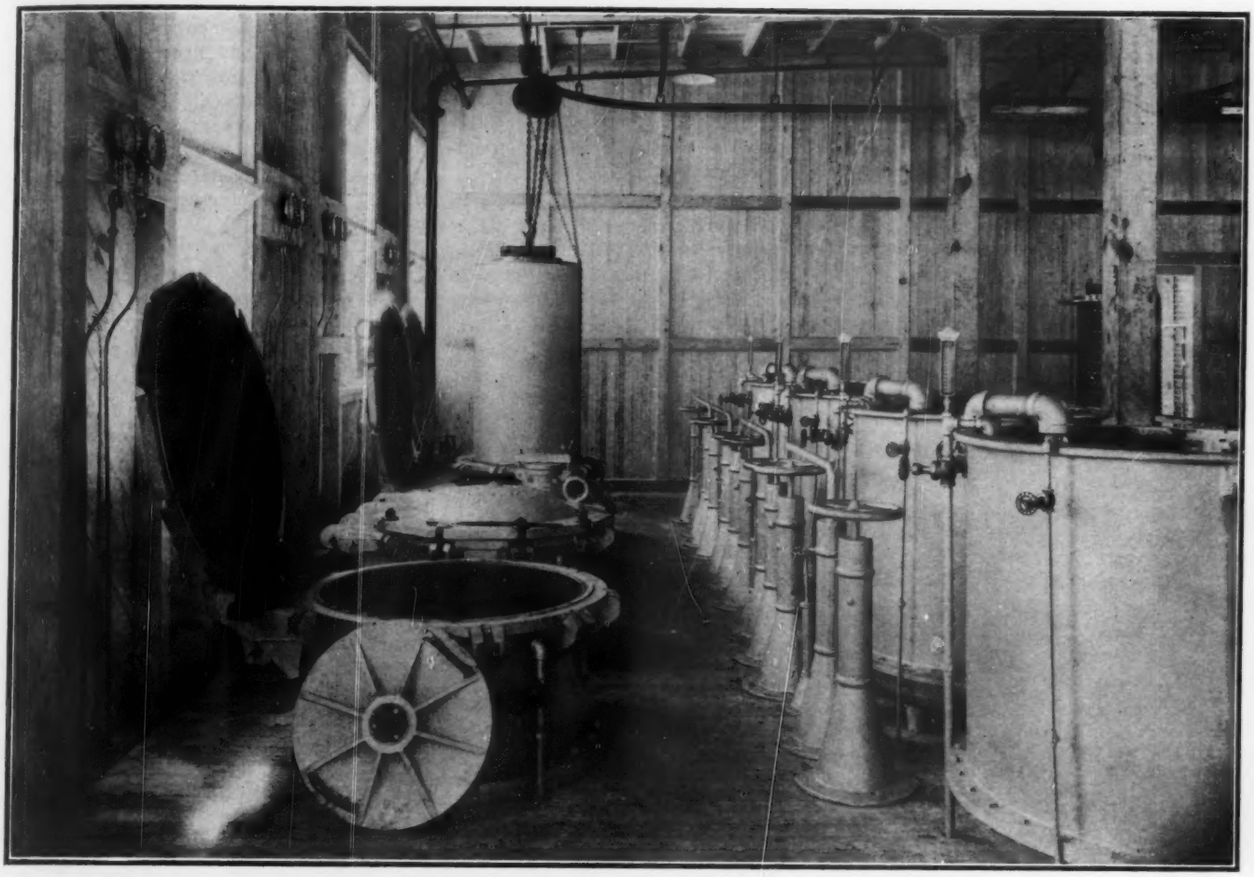
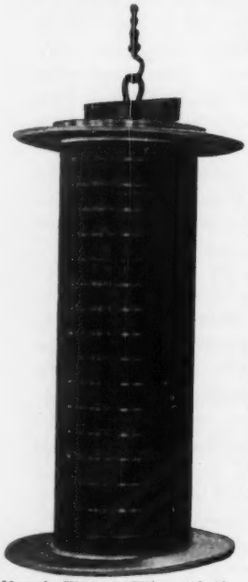


*PHOTO SHOWS INSTALLATION IN LEADING TEXTILE MILL*

# Approved by Dye Plants Everywhere

## As a Sound Investment



*Monel Woven Wire Cloth Dyeing Beam*

Dye Plants everywhere are enthusiastic over this Combination Roving and Yarn Dyeing Machine. With it they are dyeing roving yarn packages and beams in the same machine, affecting great savings in material and time when running sample or small orders as compared to running them from dyed raw stock. This machine has made it possible to get many new novelty color combinations in spinning.

Logically, one of the reasons for this enthusiastic approval by the industry is the fact that this combination machine originates the results in quality and beauty of product together with economy and efficiency of production demanded by the industry today. It is a true interpretation of the needs of the industry and backed by 15 years of development and specialization in dyeing machinery.

Let this Gaston County Combination Machine modernize your dye plant on the true basis of continued sound economy and efficiency. Write us today for full information.

*Roving and Yarn Package Container*

# GASTON COUNTY DYEING MACHINE CO.

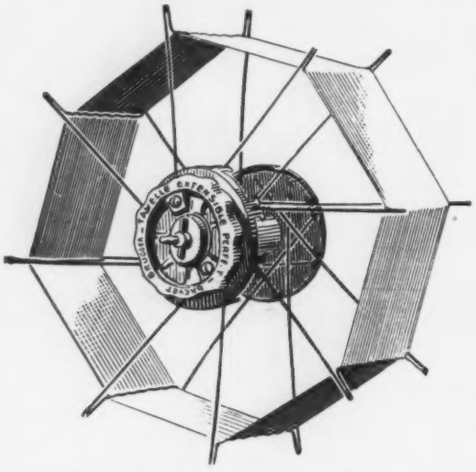
*Address all correspondence to main office:*

**STANLEY, NORTH CAROLINA**

INVENTORS AND MANUFACTURERS OF: Beams and Machines for Beam Drying, Beam Winding, Beam Dyeing, Package Drying, Bleaching on Beams and Packages, Roving Dyeing, Roving Drying and Vacuum Extracting Machines.

## Improved Swifts for Skein Winding

Brugger Winding Company, 41 East Gowen Avenue, Philadelphia, Pa., have placed on the market in this country the "Perfect" line of patented self-balanced expanding swifts for use in skein winding, which, it is stated, are already in use in about 2,000 mills throughout the world. These swifts are designed for use on all textile fibers, and are adaptable to all winding machines. The "Perfect" swift consists of 8 non-breakable, rust-proof



The Type BB Brugger swift

flexible piano wire arms, the cross-bars of which (on which the skeins rest), cannot move individually, and are equidistant from the center, so that loosening of bands is not possible. The corrugated wire rests, which hold the skein scientifically spread, are wide and deep enough to accommodate any width, weight or size of skein.

Great expansion in diameter and fine adjustment for any tension is possible, it is explained, and when once set for a certain size of skein, no further adjustment is required when feeding skeins of the same circumference, due to the flexibility of the music wire arms. The yarn is uniformly tensioned, due to the perfect balance while rotating, and accurate self-centering rotation eliminates wobbling and spindle vibration and insures smooth steadfast running and accurate bobbins. The Universal type BB, with an expansion from a minimum circumference of 40 inches to a maximum of 60 inches, makes it possible to use only one standard swift for any skein irrespective of size.

The balance, it is pointed out, produces a permanent uniform delivery without dependence upon difficult adjustments, and the swifts give regular speed to the friction driven spindles.

In securing tension on the swifts, two improved models of tension weight are used—one of four ounces, divided into four smaller plates of 1-ounce each, and one of eight ounces, divided into four smaller plates of 2-ounce each—representing about one-third to one-fourth of the weights necessary on old-style wooden swifts.

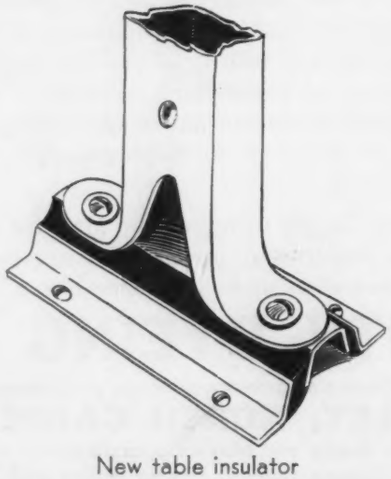
The "Perfect" swifts are offered in the following varieties to meet different requirements: Type A, for rayon, circumference expanding from 38 to 50 inches; Type B, for raw silk, circumference expanding from 52 to 64 inches; Type BB, Universal model, expanding from 40 to 60 inches, suitable for silk, rayon, organzine, tram, spun silk, cotton and wool; Type L, for Lastex rubber yarns, expanding from 30 to 40 inches; Type G, horizontal rayon cake swift, expanding from 11 to 20 inches; and Type GV, vertical rayon cake swift, expanding from 11 to 20 inches.

In addition to the regular line, the company makes also special types of swifts for any purpose, and also manufactures swifts with hollow shafts to be adapted to Foster or bottle bobbin winders with only one single bracket to hold the swift.

* * *

## Vibration Insulators for Sewing Tables

A recent invention announced by Union Special Machine Co., 400 N. Franklin St., Chicago, Ill., is a new type of insulator suitable for installation on the bottom of sewing table legs. The device is made up with an inverted U-shaped steel channel in the center, to the outer sides of which are bonded two heavy blocks of live rubber. Angle irons bonded to the outer sides of the rubber serve as a base for anchoring the insulator to the floor. The table leg is bolted to the center channel iron. Thus, the only contact between table leg and floor is through the blocks of rubber.



New table insulator

Union Special Machine Co. has secured long sections of this material and made it available in proper lengths for use on sewing tables with holes drilled for the necessary bolts and screws.

* * *

## Air Nozzles

The Lunkenheimer Company, Cincinnati, Ohio, have issued a new folder illustrating and describing the new line of Lunkenheimer air nozzles with renewable non-metallic disc.

* * *

## New Clutch for Sewing Machine Drive

American Safety Table Company, Reading, Pa., have announced a new electric clutch for individual sewing machine drive. An improvement of the tapered clutch and brake used in the American group drive table has been used, and particular attention has been given to provide the operator a sensitive control requiring minimum pressure on the treadle. The unit is compact, and all working parts are housed and shielded. Three bolts attach the unit to the under side of the table.

* * *

## "Guide to Profit through Paint"

Sherwin-Williams Company, Cleveland, Ohio, have issued a "Guide to Profit through Paint", which attempts to put paint on a unit cost basis and to show the industrialist that, properly approached, the problem of painting a plant offers advantages in cost just as new machinery offers advantages over obsolete equipment. "The subject of painting needs thorough research," the company points out, "it needs wide dissemination so that industry can take what amounts to maintenance material and make a real production asset of it." The booklet helps to create that understanding.

* * *

## Packing Catalog

Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa., have prepared a new catalog on Leather Packings, No. A-49, containing 24 pages, illustrated. It describes the company's line of leather packings for all types of usage.

* * *

## New Position Transmitter and Recorder

A duplicate position telemeter system for indicating and recording at a distance the position of mechanisms such as bridges, gates, valves or water level in water power plants, engine governor positions, or the position of any important mechanism, is a new product recently announced by the Westinghouse Electric & Manufactur-

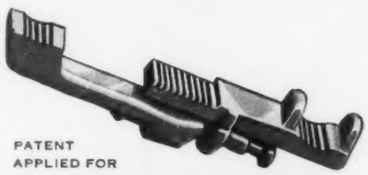
*See us at the Southern Textile Exposition*

# Front Page News

*Booth No. 427 Annex No. 1*

* * * * PUBLISHED BY THE JOHNSON BRONZE COMPANY * * * *

# NEW DEVELOPMENTS IN BRONZE FOR TEXTILE MILLS



PATENT APPLIED FOR

## GRAPHITED BRONZE SADDLES SET NEW RECORD

A new operating record was established recently by the Johnson Graphited Bronze Spinning Frame Saddle. 5000 continuous hours without lubrication—and yet showed absolutely no sign of wear.

This test was made in a prominent textile mill under the supervision of Johnson Engineers. Plant executives were agreeably surprised when they definitely checked the facts.

The combination of graphite and Bronze in this particular . . . yet highly important part, eliminates entirely the necessity of a lubricant. There is a definite saving in oil and oiling operations.

The fact that this saddle showed no trace of wear is important in that it provided a constant uniform yarn and aided considerably to the general satisfactory performance of the machine. The elimination of oil prevents spotted or damaged yarns.

Sample saddles are available for tests in your own mill. Your request should be made to the home office.

## COMPLETE STOCKS CARRIED IN ATLANTA

Your needs in maintenance bronzes such as Johnson UNIVERSAL completely machined Bronze Bars; Johnson General Purpose Bushings and Johnson Electric Motor Service Bushings can be filled . . . without delay . . . from our Atlanta warehouse, located at

544 Spring Street, N. W., Atlanta, Georgia.

Requests for Bulletins . . . or for Samples should be made to the home office.

## ELIMINATES OIL HAZARDS AIDS MACHINE PERFORMANCE

Research, plus exhaustive test have brought to light many new and interesting developments in Bronze for Textile mills. Johnson Engineers, working in conjunction with engineers and owners of many large and prominent mills, have made great strides towards increasing machine performance and cutting maintenance costs.

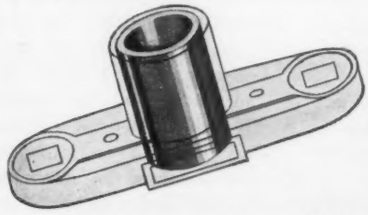
Bronze . . generally recognized as the ideal bearing material . . is made increasingly valuable by the addition of lead and graphite. The Johnson Bronze method of combining bronze and graphite . . a thoroughly patented process . . retains the necessary bearing characteristics and provides, in addition, the required lubrication.

With Graphite as a fundamental part of the bearing, operations such as constant oiling and such dangers as oil spots on goods in process, are eliminated.

These new bearings were developed to meet certain specific applications such as: Picker Evener Shafts; Card Top Flats; Card Feed Roll Drive Shafts; Feed Rolls; Drawing Calender Rolls; Coiler Shafts on Cards and Drawing; Speeder Drive Heads; Intermediates; Slubbers; Spinning Frame Heads; Spinning Cylinders; Warpers; Spooler Cylinders; Slashers; Loom Harness Motion Shafts; All Loose Pulleys in Mill.

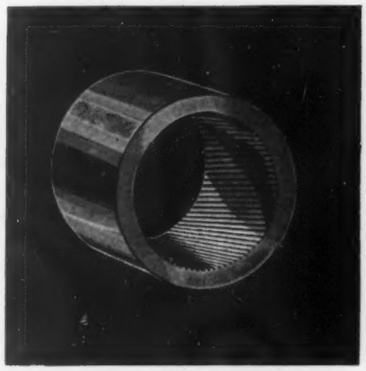
## SAVING WORN ROCKER SHAFT BRACKETS

It is no longer necessary to discard worn Rocker Shaft Brackets. The simple application of a Johnson Bronze General Purpose Bushing will give longer life and more efficient performance to the bracket.



This bushing can be applied to the bracket or to the shaft and in either case works entirely satisfactorily.

Johnson General Purpose Bushings are available in over 600 sizes, machine finished, ready for assembly. Write for a copy of Bulletin No. 340.



## GRAPHITE THAT "STAYS PUT" . . .

Johnson Bronze Graphite Bearings provide for from 40% to 45% of graphite contact with the shaft. Minute dovetailed grooves are cut into the metal longitudinally at a lead of 7°. Into these the graphite is compressed and permanently held.

The graphite itself is not soluble in water, oil or gasoline. An occasional application of oil or grease greatly prolongs the life of the bearing.

**JOHNSON BRONZE**

**Factory and General Offices**
**New Castle, Pa.**

**Branch Offices and Warehouses in Principal Cities**

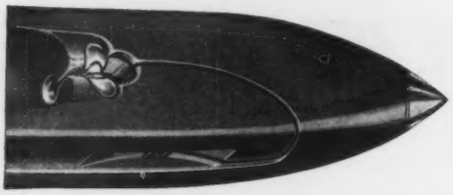
ing Company, East Pittsburgh, Pa.

The type "GH" position recorder is assembled in a rectangular case for switchboard panel mounting. An improved duplicate position type of motor operates a direct acting pen which records on a strip-type chart variations in the position of remotely associated mechanisms operating a motor-type transmitter.

* * *

### New Silk and Rayon Shuttle

US Bobbin & Shuttle Co., Manchester, N. H., have developed a new tension shuttle for silk and rayon, called the US Unit Tension. It follows in natural sequence the US Jackson tension shuttle now used in bobbin-changing looms. The Unit Tension has the added feature of being equally effective in shuttle-changing, box or plain looms, it is stated; it eliminates the necessity of using mops, elastic bands, etc. It may be set to any desired tension and will maintain this position without further adjustment, making it unnecessary to stop looms to make changes, the manufacturers explain.



The new Unit Tension silk and rayon shutle . . . . . .

* * *

### Booklet on Metal Gate Valves

The Lunkenheimer Company, Cincinnati, Ohio, are distributing a new folder which illustrates and describes the Lunkenheimer "Causul" metal gate valves for corrosive service.

* * *

### Louis Allis "Messenger"

The Louis Allis Co., Milwaukee, Wis., is publishing regularly every other month a 24-page company magazine for those interested in the purchase or maintenance of electric motors. The magazine is printed in colors, and contains not only engineering data and technical articles on electric motors and other equipment, but also articles of general interest.

* * *

### Motorized Reducer Catalog

Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill., has issued a 20-page illustrated catalog No. 1515, devoted to the company's newly developed line of motorized speed reducers, in which the motor is mounted directly on the side of the reducer housing, thus making a shaft coupling or a motor base plate unnecessary. It shows by means of an example how the proper reducer can be selected from the tables, which give dimensions, capacity ratings, and speed ratios.

### "Chromated Zinc Chloride—An Improved Wood Preservative"

The Grasselli Chemical Co., Inc., Cleveland, Ohio, have published a copyrighted 14-page book dealing with Grasselli chromated zinc chloride for wood preservation. It is a comprehensive discussion of the treatment of wood for preservation, and deals first with a thorough investigation of this subject, and discusses the features of zinc chloride—the major constituent of the company's chromated zinc chloride—as a wood preservative. It supplies complete records of tests of various kinds determining the results of preservative treatment by various methods. The book provides altogether an interesting study and reference in connection with the subject of wood preservation.

* * *

### Medart Catalog

The Medart Company, manufacturers of power transmission machinery, Potomac and DeKalb Sts., St. Louis, Mo., have issued Medart Catalog No. 56-G containing standard listings, weights and dimensions on gears, sprockets and chain.

* * *

### Economical Distribution Needed

"The business depression through which this country has been passing has disclosed how well we can design and manufacture productive machinery and how well we can use this machinery to produce goods in quantity at low cost, but we have not learned how to distribute this machinery in an economical manner," according to Bernard Lester, assistant industrial sales manager of Westinghouse Electric and Mfg. Co. and author of the unique book, "Marketing Industrial Equipment." "This problem is still unsolved—largely because the engineering mind, absorbed in the technical details of the machine itself, is frequently not adapted to solving problems of a commercial character. But surely the distribution of durable or capital goods deserves at least as much careful thought as has been bestowed upon the distribution of merchandised, or consumer, goods."

Since the low point of the business depression, there has been a marked recovery in the commodity or perishable goods industries. We will not attain national recovery, even to a reasonable degree, however, until those manufacturers who build durable goods such as machinery and equipment obtain a decided increase in volume of business.

The machinery and equipment manufacturer is faced with entirely new problems in developing today's market. Most users of machinery do not recognize they are in the market for such equipment. It requires a careful analysis of plant processes and plant equipment to determine what must be done to increase overall profit or decrease losses. This effort must be entirely based upon the point of view of profit to the user. The old arguments pertaining to the machine itself present no appeal, unless the use of the machine as a part of a manufacturing process, will yield a return justifying the expenditure. In his book on marketing industrial equipment, Mr. Lester presents in a practical way how the salesman can meet these present day problems in selling.

In this country manufacturers have long known with a high degree of accuracy the actual manufacturing costs for a given product. We know too, that with the extensive use of machinery, costs have been greatly reduced over a period that is baffling to sales management, and this book attempts to show the way to improved sales efficiency.

* * *

### Gair Acquires Canadian Interests

The Robert Gair Company, Inc., New York, N. Y., has added to its Canadian interests The Corrugated & Container Company, Ltd., Hamilton, and Concord Shipping Containers, Ltd., Toronto, it was announced recently by E. Victor Donaldson, president. Both companies have been active in the shipping containers field in Canada and have a combined capacity of about 7,500 tons a year. The business of both will be carried on with no change in management or representation.

* * *

### New Equipment for N. C. Textile School

One of the latest Crompton & Knowles Super Silk automatic shuttle changing looms has been added to the equipment of the weave room at the textile school of North Carolina State College. This loom was presented to the school by W. J. Carter, vice president of the Burlington Mills, Burlington, North Carolina, who is a graduate of the school, class of 1924.

A cork buffing machine for covering cork rolls has been added to the equipment of the yarn manufacturing department. This machine was donated to the school by the Sonoco Products Company, Hartsville, South Carolina.

# 3 FOR THE PRICE of ONE

Here's the most versatile textile box made. It's the box with the telescope lid. Pack it to the top or from five to fifteen inches above the top. Steel straps and strong, staunch H & D corrugated fibre boxes protect your product under all conditions. Investigate the telescoping box today—it gives you three boxes for the price of one. The Hinde & Dauch Paper Co., 454 Decatur St., Sandusky, Ohio.

***The booklet below will be sent to you promptly on request.***

## HINDE & DAUCH

★ *Corrugated Fibre Boxes*

PLANTS IN PRINCIPAL CITIES

# TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

## Dorr Discusses Inventory Control

Importance of effective inventory control in minimizing distribution problems of the cotton textile industry was emphasized by Goldthwaite H. Dorr, recently elected president of the Cotton Textile Institute in an address recently at the annual meeting of the Association of Cotton Textile Merchants in the Union League Club.

Mr. Dorr urged the merchants to overlook no opportunity to urge on mills the necessity for avoiding the creation of over-supplies of stocks, pointing out that "manufacturing for inventory in the absence of orders, or a reasonable prospect of orders, may not seem to be a serious thing from the standpoint of an individual mill but, in the aggregate, it can create a Frankenstein which soon destroys our market stability.

"There is one aspect of effective distribution of immediate importance," said Mr. Dorr. "How much can the various markets be expected to absorb in the future so that an effective inventory control can be maintained? The proof of good merchandising is, of course, sales which are profitable to the mills whose merchandise is being sold. If the mills made no more goods than those for which the selling agents send specifications, the danger of unwieldy accumulations of unsold stocks would be largely obviated. In other words, if the undue pressure of goods on the market could be removed, the price level would be more satisfactory. Distribution is, therefore, inevitably bound up with manufacturing practices, and any defect in our distribution creates a common problem between mills and selling agents. In this regard, as in many others, the selling agents and mills are partners in an enterprise which is essential to the continued existence of each, and it is inconceivable to me that the vitality of one could long continue in the absence of a corresponding vitality of the other.

"During my eight years as counsel for the Institute I have become familiar with the conditions in the Industry, and feel strongly that the merchants should never overlook the opportunity to impress upon the mills which look to them for guidance, the continued intelligent watchfulness necessary to avoid the creation of an over-supply of stocks. Manufacturing for inventory in the absence of orders, or a reasonable prospect of orders, may not seem to be a serious thing from the standpoint of an individual mill, but in the aggregate, it can create a Frankenstein which soon destroys our market stability. In the avoidance of such a situation our partnership offers the brightest possibilities.

"I realize fully, of course, that one of the causes of such pressure to create stocks in times of lean demand is, within certain limits, the worthy sense of responsibility which the mills feel toward preserving a reasonable continuity of employment. The preservation of mill villages, and the dependence of entire communities upon the operation of cotton mills make it easy for mills to yield to the urge to manufacture for stocks when orders run out. We all know, however, that carried beyond reasonable bounds, this practice can strike at the very heart of its chief purpose, because after the accumulations of stocks have exceeded reasonable bounds, orders dry up, mills are closed for long periods, and the very employees and mill communities whom the mill operators sought to protect, ultimately are thrown out of employment for periods far longer than those which have been occasioned by orderly and periodic shut-downs.

"Do not forget that the machine hour limitation in our Code does not close the gap between productive capacity and demand, but merely narrows it, and that it does not and cannot relieve you, as merchandisers, of the necessity for that exercise of intelligent judgment with respect to gauging the market demand which has always been essential to every business enterprise. While the Code technique with respect to putting a limit on capacity is by no means perfect, and we are constantly striving to make material improvements in it, there will always remain an ample field for individual action, for which no industry wide law can provide a satisfactory substitute.

"The Federal Trade Commission has recently published some interesting figures on the investment and income position of the Industry, which show the results of your efforts to make money for the cotton mills during the last twenty months. While a profit was shown during the first twelve month period, this comparative prosperity seems to have ceased about the middle of last year. The two months period for July and August 1934 covered by the Federal Trade Commission's report shows a substantial loss and, judging from the low manufacturing margins prevalent during the last months of last year, this loss continued throughout the remainder of the year.

"I attended yesterday the NRA hearing in Washington on questions relating to price fixing, which included the consideration of provisions as to limitation on capacity, in so far as such provisions tend to affect prices. Inasmuch as we have no price provisions in the Cotton Textile Code, my appearance was limited to a discussion of limitation upon capacity as it affects our industry. You are only too well aware that the limitation on capacity preserved by our machine hour code provisions has not had a tendency to create a scarcity. There has been less than 75 per cent utilization of capacity even under our Code provisions. In other words, the cotton mills could have manufactured fully 25 per cent more goods than were actually sold. Furthermore, in arriving at these percentages, we have taken into account only those spindles in the Industry that have actually been in operation under the Code, and not the spindles that have been continuously idle. We are, therefore, far from anything resembling a lowering of production. What we have accomplished by the machine hour provisions of the Code is a wider distribution of the available business through creating a measurable uniformity in maximum running time. Triple shifts and long double shifts have now come to an end, and I believe very few of us would want to see them return."

* * *

## U. S. Testing Co. Opens Station in Brooklyn

The opening of a Brooklyn testing station on March 1st was announced recently by the United States Testing Company, Inc., whose main headquarters and plant are in Hoboken, N. J.

The new branch of the company is located at 43 Morgan Avenue in the heart of the Brooklyn knitting industry. The opening of this branch is in line with the company's policy of establishing branch laboratories close to the organizations using its testing facilities in order to give quicker service and to be handy for personal discussion of questions.

The new unit will be equipped to offer a complete testing service on woolen, worsted, cotton, silk, rayon and acetate yarns and fabrics.

Opening of the Brooklyn unit marks the addition of another division to those now operating in New York, Hoboken, Chicago, Philadelphia, Paterson, Providence, Woonsocket, Greensboro, Fitchburg, Reading, Lowell and Bridgeport, Pa.

* * *

## Patent Awarded on Condor Compensated Belt

The Manhattan Rubber Mfg. Division, Raybestos-Manhattan, Inc., Passaic, N. J., recently announced that patents have been granted on its Condor compensated belt—the low tension rubber belt, awarding to the company exclusive rights of manufacture of this belt, in the construction of which, it is pointed out, ply stresses are equalized when the belt flexes around the pulley.

### First Quarter 1935 Textile Activity Far Exceeds Same Period in 1934

Activity in textiles and related industries for the first quarter of 1935, judged by the record of January and February, bids fair to largely exceed that of the corresponding period of last year, in the opinion of J. Frederick Talcott, President of James Talcott, Inc., textile and general factors for the past 81 years. This activity, he believes, emphasizes the need for wider markets and new channels of distribution, if the upward trend is to continue.

"A careful survey of the activities of the more than 300 plants for which we do act as factors," said Mr. Talcott, "has led us to establish a market research department to facilitate the securing of wider distributing outlets for the products of our various clients.

"The curtailment of import and export volume due to international economic conditions has made the intensive cultivation of domestic markets a necessity," Mr. Talcott continued. "Government activities have been largely directed towards the fostering of medium-sized businesses, and something has been accomplished in the way of strengthening the defenses of such concerns from a legal and operating standpoint. The need, however, for increase of sales volume, especially in view of mounting costs for labor and materials, is more than ever imperative."

* * *

### David O. Blevins Joins Dixie Mercerizing Company

J. Burton Frierson, vice-president and sales manager of the Dixie Mercerizing Company, Chattanooga, Tennessee, has announced that, effective April 1, David O. Blevins of Chattanooga will represent Dixie in the Chattanooga and surrounding territory.

Mr. Blevins has represented textile concerns, including the Kaumagraph Company which he will continue to represent, in this territory for the past five years. He is a member of the Chattanooga Textile Association and has been active in promoting the Association's meetings and golf tournaments.

Mr. Blevins is a member of the Chattanooga Golf and Country Club, and the Mountain City Club in Chattanooga.

Mr. Blevins will join with E. R. Kimball, who has represented the Dixie Mercerizing Company in the southern territory for several years, in contacting mills in this territory, in which he has developed a wide acquaintance in connection with the lines he has been representing.

**Buy Your Window Shades in Cans**

***at 1-2c Per Square Foot!***

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine.* If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

Like an Umbrella Over Your Plant

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

**Try NO-GLARE at our Risk**

***Write or Use Coupon***

**The SKYBRYTE Co.,**
**1929 E. 19th St., Cleveland, Ohio.**

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company.....

Address .....

# PERSONAL NOTES

## about Men You Know

JOSEPH E. JOHNSTON has become superintendent of the Grier Cotton Mills, North Wilkesboro, N. C., succeeding W. S. MOORE, resigned. Mr. Johnston was formerly manager of the Neely-Travora Mills, York, S. C.

W. H. LEATHERS, formerly master mechanic at Newberry Cotton Mills, Newberry, S. C., and more recently connected with the Johnson Bronze Co., New Castle, Pa., has become master mechanic at the Entwistle Mfg. Co., Rockingham, N. C.

E. W. MCMILLIN, formerly superintendent of the company's cotton mill and Daisy hosiery plant, has been made vice-president and general manager of the Richmond Hosiery Mills, Rossville, Ga.

LOUIS M. CARPENTER has become general manager of the Drayton Mills, Spartanburg, S. C., where J. T. WARDLAW is treasurer. Mr. Carpenter, for many years treasurer of the Ashland Cotton Co., Jewett City, Conn., came South several years ago as treasurer of the Spencer Corp., Spindale, N. C., which is now in the process of reorganization following receivership, and Mr. Carpenter will continue as receiver.

M. M. TAYLOR has been promoted to overseer of weaving at Mill No. 4, Pelzer Mfg. Co., Pelzer, S. C.

J. B. BOYTER is assistant superintendent and overseer of spinning at the Fitzgerald Cotton Mills, Fitzgerald, Ga. He was formerly with Manville-Jenckes Corp., Gastonia, N. C.

SAMUEL H. SWINT, who has been secretary and treasurer, was recently promoted to vice-president and treasurer of Graniteville Manufacturing Co., Graniteville, S. C. H. J. GRIFFIS was named secretary. LANIER BRANSON was re-elected president of this concern and also of the Gregg Dyeing Company, in which Mr. Swint was re-elected secretary and treasurer, and H. A. WOODHEAD vice-president.

JAMES W. COX, JR., was recently made president of the Fitzgerald (Ga.) Cotton Mills, and J. H. MAYES was made vice-president, treasurer and general manager. K. A. THOMPSON, JR., was made secretary and I. C. WALKER, superintendent.

WALTER B. DILLARD, JR., formerly at Fitzgerald, Ga., has become manager of the Planters & Merchants Mill at New Braunfels, Texas.

G. B. DAVIS, who has been with the mill for 10 years as overseer, is now acting as superintendent of the Pelham Mills, Pelham, S. C., succeeding JOHN WARD, who has retired.

DAVID C. COCKS was recently elected assistant secretary and assistant treasurer of the Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City. Mr. Cocks has been with the company for 18 years, working his way up from the ranks to his new office. He was guest at a testimonial dinner given him in honor of his recent promotion by his associates and co-workers, at which F. R. TOWLE, treasurer and general manager, acted as toastmaster.

Mr. Cocks

J. J. CROWDER has become overseer of spinning at the Merrimack Manufacturing Co., Huntsville, Ala., succeeding P. B. CROUCH. Mr. Crowder formerly was overseer of spinning at the Columbus Manufacturing Co., Columbus, Ga.

NELSON N. HARTE, who some months ago became overseer of carding at the Merrimack Manufacturing Co., Huntsville, Ala., has been promoted to the position of assistant superintendent at this mill, assuming these duties in addition to his former ones. V. W. LOVILL is superintendent.

H. A. RUSH has resigned as superintendent of the Panola Mills, Greenwood, S. C., and is now owner of the Purol service station in Greenwood.

GEORGE H. BUCHER was recently elected a vice-president of the Westinghouse Electric & Mfg. Co. Mr. Bucher, who is also president and general manager of the Westinghouse Electric International company, has been connected with the Westinghouse organization since 1909.

FRED P. BROOKS, Atlanta, Ga., has been appointed sales representative of Precision Gear and Machine Co., Charlotte, N. C. B. G. WOODHAM has resigned as assistant superintendent of Sanford Cotton Mills at Sanford, N. C., and has returned to his former position as traveling representative for Precision in the Carolinas.

### Obituary

ALBERT C. WEED, vice-president of Borne, Scrymser Co., producers of lubricating and technical oils, 17 Battery Place, New York City, passed away suddenly at his home, Manhasset, L. I., on February 23, at 68 years of age. He had been associated with Borne, Scrymser continuously for a period of 45 years, having started there as a young man. He was largely responsible for the successful development of the Breton Minerol process of oil treating cotton fibers. Mr. Weed had taken an active part in the affairs of his company up to the day of his passing, which came as a result of a heart attack.

J. R. DUNSON, agent of The W. A. Handley Mfg. Co., Roanoke, Ala., passed away in Miami, Florida, on February 27, after an extended illness. Funeral services were held in LaGrange, Ga., Mr. Dunson's former home, on Saturday, March 2.

M. R. VICK, overseer of carding, Rosemary Mfg. Co., Rosemary, N. C., for many years, passed away on February 19, following an illness of pneumonia. Mr. Vick was prominent in the work of the Southern Textile Association, and was a member of the board of governors of the organization. He was a graduate of N. C. State College in textiles. He was 63 years of age, and is survived by his widow and six children.

WILLIAM SACHSENMAIER, president of Larkwood Silk Hosiery Co., Charlotte, N. C., died at his Miami, Fla., winter home on February 23 following a heart attack. He was 61 years of age, and is survived by one daughter and one son, of Charlotte, and three brothers of Philadelphia.

A. D. OLIPHANT, southern manager for Textile World and other McGraw-Hill publications, passed away in an Atlanta hospital on Friday, March 8, as a result of injuries received a few hours earlier in an automobile accident near Douglasville, Ga. Funeral services in Greenville, S. C., Mr. Oliphant's residence, with burial in Christ Church cemetery. Mr. Oliphant was 45 years of age, and is survived by Mrs. Oliphant, one daughter and two sons, of Greenville, his mother and one brother, of Union, S. C. Mr. Oliphant had been connected with Textile World since 1920.

BARBER-COLMAN COMPANY
GENERAL OFFICES AND PLANT
ROCKFORD, ILL., U.S.A.

To our Friends:

The Eleventh Southern Textile Exposition will be held at Textile Hall, Greenville, S. C., April 8 to 13, 1935.

Space No. 248 on the second floor of the main building will be occupied by us, and we invite your inspection of our new products, as well as improvements and changes which have been made in the machines with which you are familiar.

Big Package Automatic Spooler. This machine will be in continuous operation at a winding speed of 1200 yards per minute. In addition to a number of mechanical refinements, the packages produced will contain approximately 70% more yarn than formerly.

Improved Super-Speed Warper. This Warper will be in actual operation at a winding speed of 900 yards per minute. Numerous mechanical improvements have simplified the operation and decreased the cost of maintaining the machine.

Rayon and Silk Warp Tying Machine. A new Portable Warp Tying Machine (Model LS) designed for tying rayon and silk warps, will be exhibited and will be operated as nearly as possible under mill conditions.

Electric Controls for Heating, Ventilating, Etc. We are now offering a complete line of electrically operated controls for all types of heating, ventilating and air conditioning systems, as well as thermostats and motor-operated valves for industrial process control.

We suggest that you make our booth your headquarters during the Textile Show.

BARBER-COLMAN COMPANY

*This Exclusive Feature*

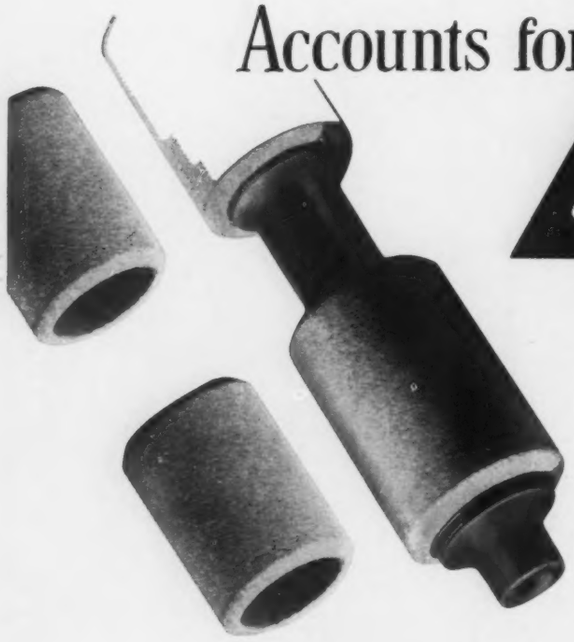
*in*

GUMMED
CLOTH
INNER-LINING

# SONOCO

CORK
COTS

Accounts for 3 point superiority



1. Re-inforced—to control elongation or spread when running—
2. Re-inforced—to maintain uniform density that keeps surface parallel—
3. Re-inforced—to make application simplest and most efficient method known.

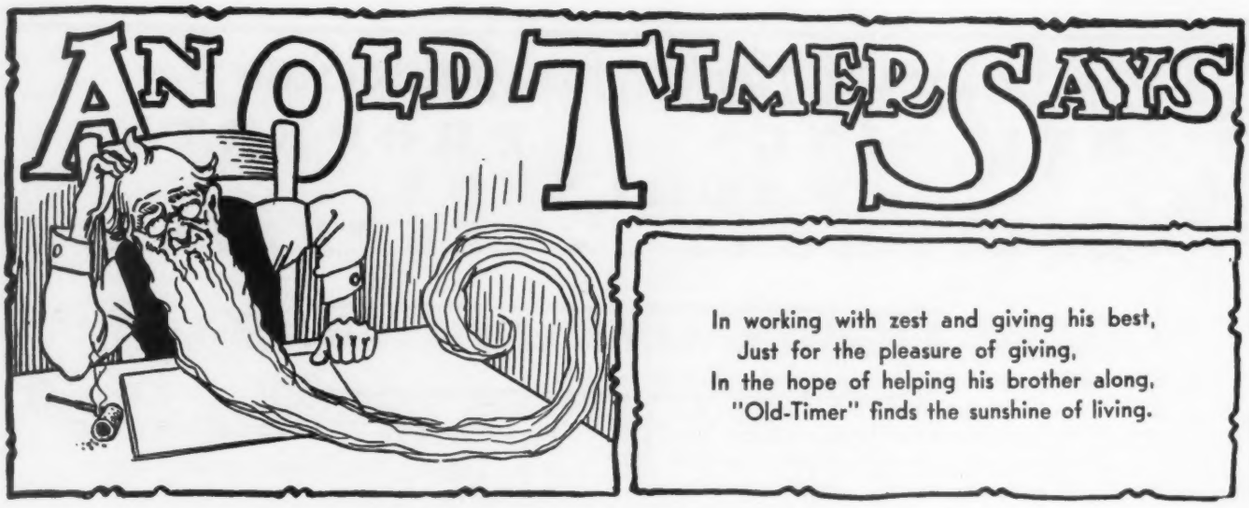
VISIT THE SONOCO EXHIBIT
**Southern Textile Exposition**
Greenville, S. C., April 8-13

## SONOCO PRODUCTS COMPANY

BRANCH PLANTS
Rockingham, N. C. Garwood, N. J.
Mystic, Conn.
Lowell, Mass. Brantford, Ont.

HARTSVILLE, S. C.
MAIN PLANT and
GENERAL OFFICES
Hartsville, S. C.

NORTHERN SALES OFFICES
Climax-Lowell Division
Mystic, Conn.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Preaching and Practicing!

I WILL vouch for the fact that the percentage of readers who can answer the following question in the affirmative will be very, very small—in fact, infinitesmal. (Whoopee! that's some word, isn't it?)

The question is as old as the hills, and you have heard it many times, but the point I am trying to bring out is that people—you and I and the other fellow—have not taken it seriously. We have never really tried to apply it to *our* every day lives.

We have just passed it over as a "saying" that some "boob" wise or otherwise started thousands of years ago, probably—and feel, "Well, he wasn't talking to me anyway, so skip it."

Now that is just the trouble all writers have. People read articles or whatever you call 'em—just read them, that's all. Oh! sometimes one reader may get a little interested and say, "That's pretty good reasoning", but even then that reader never considers that the writer is talking directly to him or her. Because it's printed they have the feeling that the writer is talking to "the public".

Now, Mr. Editor, promise me this: If you ever find a way to get your readers to realize that all your efforts and hard work in writing an article are always with *one* person in mind—that person who is reading the article—that you are talking to him or her alone—the same as though you and that one person were locked in a death cell where no one but you two could hear what was being said—

I say, if you ever find a way to do that, please let me have the secret. Because I know from experience that there is nothing in the world that gives a writer more enthusiasm than to find a reader who has really felt he was talking to him and has profited by his efforts.

Human nature is a strange "animal", and here is that simple question I was going to ask you:

"Do you practice what you preach?"

Hold on, now. Don't be quite so quick to say: Shucks, I thought he was going to ask something. Well, confound it, I *have*. The trouble is you will not take it seriously. You will not make an effort to apply it to your every day life.

You will tell some friend he is smoking too many cigarettes, then smoke too many yourself. I once heard a doctor give a young man "down the country" for smoking cigarettes—warned him it would ruin his lungs, etc., etc. You know the usual conversation. And by George, that doctor all during the conversation was smoking a cigarette himself!

You will tell some friend he should have a definite system of saving part of his salary, and then go out and spend all of yours.

You will say, "What a fool he was to lose his temper that way"—and lose your temper just as badly the next day.

You will tell John he certainly should be more careful with his diet—he is killing himself—he should take a different attitude toward the boss or the firm if he ever expects to gain promotion; and why in the world does he always carry that grouch? Doesn't he know that a pleasant disposition, etc., etc.

Oh, yeah, you can "preach" all right, but what I am asking is: "Can you *practice*"?

Try it a few months and you will really be surprised to find what a different person you are!

### Short Shots

Nothing can be wasted until it is first produced.

If you see a child building a house with his blocks you would say it would be a mean man who would walk up and kick it over. Well, that is what most of us are doing with things that are produced by some man's labor. We walk up and kick over part of it when we make needless waste.

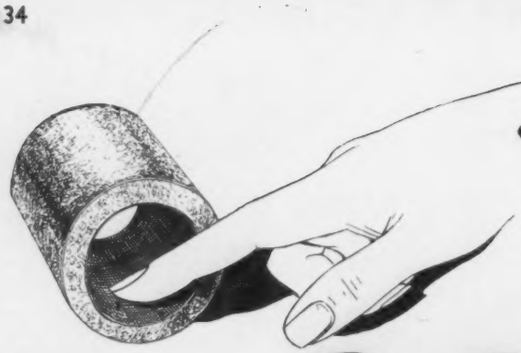
If we throw away a shuttle, a belt, a bolt or anything that could be used if we had bought it with our own money, we are wasteful.

If all operatives would use supplies like they would use them if they paid their own money for them, all manufacturing concerns could raise wages.

Pass this thought along to your section men.

* * *

There is no difference in value between a kicking mule and a kicking man. No one would buy either.



*This Exclusive Feature*

*in*

GUMMED
CLOTH
INNER-LINING

# SONOCO

CORK
COTS

Accounts for 3 point superiority

1. Re-inforced—to control elongation or spread when running—
2. Re-inforced—to maintain uniform density that keeps surface parallel—
3. Re-inforced—to make application simplest and most efficient method known.

VISIT THE SONOCO EXHIBIT

**Southern Textile Exposition**

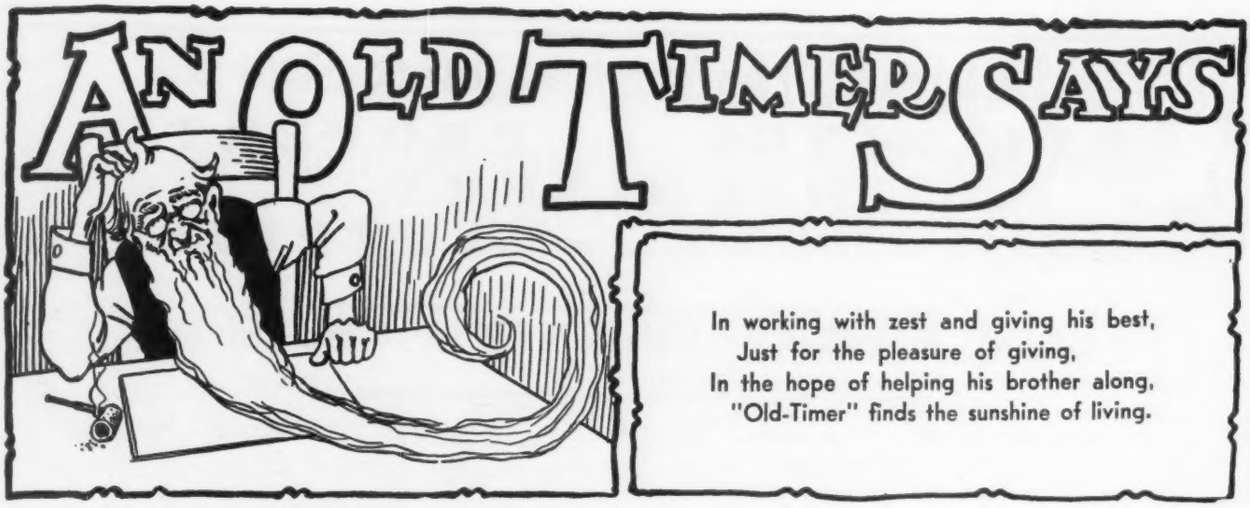
**Greenville, S. C., April 8-13**

## SONOCO PRODUCTS COMPANY

BRANCH PLANTS
Rockingham, N. C. Garwood, N. J.
Mystic, Conn.
Lowell, Mass. Brantford, Ont.

HARTSVILLE, S. C.
MAIN PLANT and
GENERAL OFFICES
Hartsville, S. C.

NORTHERN SALES OFFICES
Climax-Lowell Division
Mystic, Conn.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Preaching and Practicing!

I WILL vouch for the fact that the percentage of readers who can answer the following question in the affirmative will be very, very small—in fact, infinitesmal. (Whoopee! that's some word, isn't it?)

The question is as old as the hills, and you have heard it many times, but the point I am trying to bring out is that people—you and I and the other fellow—have not taken it seriously. We have never really tried to apply it to *our* every day lives.

We have just passed it over as a "saying" that some "boob" wise or otherwise started thousands of years ago, probably—and feel, "Well, he wasn't talking to me anyway, so skip it."

Now that is just the trouble all writers have. People read articles or whatever you call 'em—just read them, that's all. Oh! sometimes one reader may get a little interested and say, "That's pretty good reasoning", but even then that reader never considers that the writer is talking directly to him or her. Because it's printed they have the feeling that the writer is talking to "the public".

Now, Mr. Editor, promise me this: If you ever find a way to get your readers to realize that all your efforts and hard work in writing an article are always with *one* person in mind—that person who is reading the article—that you are talking to him or her alone—the same as though you and that one person were locked in a death cell where no one but you two could hear what was being said—

I say, if you ever find a way to do that, please let me have the secret. Because I know from experience that there is nothing in the world that gives a writer more enthusiasm than to find a reader who has really felt he was talking to him and has profited by his efforts.

Human nature is a strange "animal", and here is that simple question I was going to ask you:

"Do you practice what you preach?"

Hold on, now. Don't be quite so quick to say: Shucks, I thought he was going to ask something. Well, confound it, I *have*. The trouble is you will not take it seriously. You will not make an effort to apply it to your every day life.

You will tell some friend he is smoking too many cigarettes, then smoke too many yourself. I once heard a doctor give a young man "down the country" for smoking cigarettes—warned him it would ruin his lungs, etc., etc. You know the usual conversation. And by George, that doctor all during the conversation was smoking a cigarette himself!

You will tell some friend he should have a definite system of saving part of his salary, and then go out and spend all of yours.

You will say, "What a fool he was to lose his temper that way"—and lose your temper just as badly the next day.

You will tell John he certainly should be more careful with his diet—he is killing himself—he should take a different attitude toward the boss or the firm if he ever expects to gain promotion; and why in the world does he always carry that grouch? Doesn't he know that a pleasant disposition, etc., etc.

Oh, yeah, you can "preach" all right, but what I am asking is: "Can you *practice*"?

Try it a few months and you will really be surprised to find what a different person you are!

### Short Shots

Nothing can be wasted until it is first produced.

If you see a child building a house with his blocks you would say it would be a mean man who would walk up and kick it over. Well, that is what most of us are doing with things that are produced by some man's labor. We walk up and kick over part of it when we make needless waste.

If we throw away a shuttle, a belt, a bolt or anything that could be used if we had bought it with our own money, we are wasteful.

If all operatives would use supplies like they would use them if they paid their own money for them, all manufacturing concerns could raise wages.

Pass this thought along to your section men.

* * *

There is no difference in value between a kicking mule and a kicking man. No one would buy either.

*Unusual Offering for Quick Sale . . .*

**BUILDINGS - PROPERTY**
**MACHINERY**
**EQUIPMENT - SUPPLIES**

OF THE

**LISBON SPINNING CO.**
LISBON, MAINE

*The BUILDINGS*—Heavy brick construction —One to three stories—Approximately 115,000 sq. ft. of manufacturing and 30,000 sq. ft. of storage space. Fully Sprinklered —Splendid Power Plant.

*The PROPERTY*—259 acres, well located on the Sabattus River which provides ample supply of water for processing purposes, and for power; water rights included.

*The MACHINERY*—Complete Spinning Mill machinery and equipment—Well-known makes—All in excellent condition. Large amount of supplies—machine shop and office equipment, etc., etc.

*Inspection Invited*
Write — Wire — Phone
for information and descriptive folders

**McCORD, Inc.**
PERSHING SQUARE BUILDING
100 East 42nd Street, NEW YORK - - - - Telephone, AShland 4-0345

SEYDEL-WOOLLEY CO.

SIZING FINISHING

WARP SIZING SPECIALISTS

SEYCO SCIENTIFICALLY PREPARED TEXTILE CHEMICALS SEYCO

A CONCERN IS KNOWN BY THE CUSTOMERS IT KEEPS—

FINISHING SIZING

ATLANTA, GA.

# CLINTON STARCHES

**FOR ALL TEXTILE PURPOSES**

Manufactured by
**CLINTON COMPANY**
CLINTON, IOWA

NRA WE DO OUR PART

QUALITY SERVICE

# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

# Some Helpful Maintenance Methods on Automatic Spoolers and High Speed Warpers

**Tells how he helped to straighten out a job that had not received proper attention, and gives some practical pointers for users of these machines . .**

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

EDITOR COTTON:

A few years ago I was called to a neighboring mill to try to help them locate the reason for a constantly decreasing production on their automatic spoolers and high speed warpers. The warpers were not doing so well, due to the bad shape the spoolers were in. The spinning room foreman was a good one and the yarn came to the spoolers in tip-top condition—that is, it was apparently in good condition insofar as the shape of the bobbin or yarn on the bobbin, etc., was concerned.

I have always had an over-supply of timidity and self-consciousness, and about all that I could do when I first arrived was to take a big chew of my favorite Ram's-horn and park myself near a cuspidor while my nerves quieted down a bit. While I was standing there biting the delicious quid, it dawned on me that the traveler was running far too fast for that model of spooler, and then eyeing the cheese row I saw that it was about a fifty-fifty proposition—half the cheeses staying on the cylinder to run and the other half falling back untied. I took a good aim at the nearby cuspidor and thought to myself, "I've got a tough proposition on my hands." Upon inquiry I found that the overseer, in his anxiety to keep up production, had actually speeded up the traveler in an effort to turn off more work, which of course had failed in every way except to create more work.

I took a slow walk around the spoolers, trying as I went, to look at every working part of each unit, and I wasn't surprised to see the detector fingers pointing in almost every direction but the right one; many grid bars missing; detectors with the prongs broken, rubbing the grid bars; many with grooves cut in them due to too much pressure on the detector springs; bent pull wires and many other things too numerous to mention out of order.

After seeing so many things wrong with the machines, I sat down rather disgusted on the rim of a doff box and tore my pants on some rusty tin that stuck dangerously all along the edges. It was very natural that I examined the other doff boxes, which I found in almost the same condition, and then, thinking that anything which would cut a fellow's pants would surely cut the yarn as it was being dumped into the spooler trough, I watched the doffers pour up the next box and found several bobbins with a tell-tale dragged-up place on them.

Thinking that the doff boxes would be about the best place to begin on, I showed the bobbins which the tin on the doff boxes had scratched up, to the overseer, and he immediately had the bad tin taken off.

"Now, John," said the overseer to me, "I want you to find what's wrong with these spoolers. When you find something wrong or out of fix, show this boy (the section man) what it is and how to fix it."

I nodded my head, meaning that I would.

"I made the mistake," the overseer continued, "of putting this boy on this spooler section without proper training, and now I am paying for it."

"How long has he been a section man?" I asked.

"About eight months," he answered, and then said, "I would have let him go a long time ago but he has shown me that he wants to run his job right, and I have believed and do yet believe that with a little training of the right sort he can do it."

"Yes," I said, "I believe he will do all right, too, if he is shown what to do."

I took the section man around the spoolers and showed him all that I had seen wrong and then put him to work fixing it. He was an industrious young fellow and seemed to really enjoy the work, so about the second day we had each unit of the spoolers in tip-top condition with the exception of a few for which we had to order parts.

There is one little incident in connection with this which I must relate. When I was taking the boy around the spoolers to show him what was wrong and what should be fixed, he pointed to a detector that had

*When It Comes To Dependability*

# For CALENDERS

## SKF *Save $2500 Per Year*

● SKF makes practically *all types of anti-friction bearings.* When SKF recommends a particular type of bearing, therefore, you may depend upon it; its recommendations are *unbiased!*

SKF

BALL AND ROLLER BEARINGS 3378

SKF-EQUIPPED BUILT BY MT. HOPE FINISHING CO.

Figures tell the story of SKF dependability and cleanliness on bottom, intermediate, top, chasing and idler rolls, batcher head, drive shaft, and roll raising screw in this Mt. Hope Jumbo Calender.

Take Mt. Hope's word for it: "The saving in lubricants and maintenance we estimate will run to $200 per year per machine. We estimate that the saving in freedom from oil spots, dirt, etc., is sufficient to bring the total saving up to at least $2,500 per year. On the basis of $5,000 for the cost of changing over per machine, this means that the investment will be completely repaid at the end of two years. This estimate is based on the saving shown by the slower of the two calenders and would be greater if the high speed calenders were used as a basis." SKF engineers are only too glad to cooperate with you in meeting bearing requirements for new machinery or for change-over. SKF INDUSTRIES, INC., Front St. and Erie Avenue, Philadelphia, Pennsylvania.

one prong broken off and said, "See that detector? It's been running like that for six months and it seems to have done all right."

I didn't know what to say about it for a minute or two and I just stopped and stood there trying to think because I thought it was important. (The detector is the little two-pronged object that is pressed against the running thread by the detector spring. When the thread runs out or breaks, the detector swings around and pushes the pullwire into the throw-out hook which pulls the cheese off of the cylinder.) After a bit I thought of a way to illustrate how wrong it was for that prong to be broken off: "Your car will run on three cylinders, won't it?" I asked. "Yes," he answered. "But it does not run smoothly and it takes lots more gas?" I asked. "Yes," he answered again. "Well," I said, "it's the same way with this detector. You see, by that prong being broken off it can whack the thread in two, whereas, if it had two prongs this would be avoided."

While we were working on the spoolers I noticed that every time a traveler stopped, the section man would go start it up. I asked him why he didn't let the spooler hand start them up. He said that a few months before a spooler hand had started one wrong and in doing so several of the parts had been broken and that ever since then the overseer had made him do the starting. I told him it was no wonder his job had run down; it took about all of his time starting travelers. And another thing I noticed that took up a lot of his time and also lost production was laps forming on the cylinders.

It was the next day that I took pains to look at the cylinders or rather to examine them closely to see why there were so many laps. I had noticed that the space between the runway of the cheese was awfully black looking, but I had no idea that almost 1/32-inch of rust was there. Then to top that off, there were numerous little knife scratches all along the thread grooves. It took 24 sheets of emery cloth and two hours of the hardest work I have ever done in my life to get those cylinders in decent shape. Of course, I used a polishing cloth after the emery cloth, which left the cylinders fairly gleaming.

There were two humidifiers of the Bahnson type hanging facing the spoolers and at times the cylinders would become damp. I pointed this out to the overseer and told him that it would ruin his cylinders and that other parts of the spoolers would be damaged. I suggested having the humidifiers hung so that the moisture would not be so heavy right over the spoolers. The humidifiers were all right; they were just hung wrong.

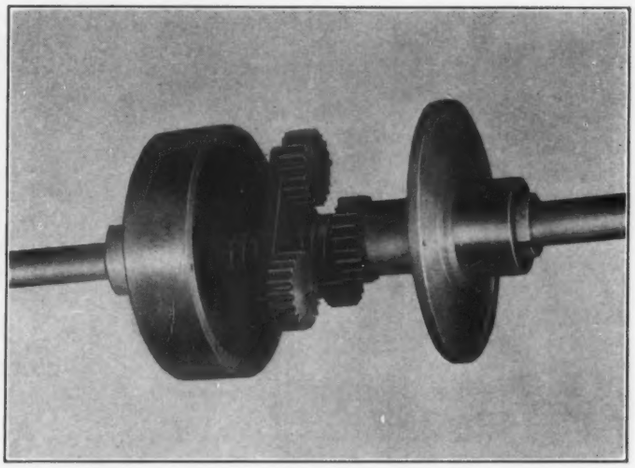
Before going further I will give a few little suggestions on how to keep the units of a spooler in good condition, which is all important in turning out good work and holding up production:

1. A unit of an automatic spooler is the working parts on one end, that is, one spindle.

2. The working parts of each unit are exactly alike, and all like parts should be in line from one end of the spooler to the other.

3. The detector fingers should all point in the same direction. If not, some of them are bent and


# Floating Power *for your* Roving Frames



This is exactly what is accomplished by the patented feature of PRECISION COMPOUNDS.

Many mills have already changed over to PRECISION, and many more are in the process of changing now.

**In over seven years of service in many mills and on all makes of roving frames, not one cent was spent by any mill for repairs or replacements on a PRECISION COMPOUND.**

It will pay you to investigate. A line from you will bring our representative to your plant with a demonstration model of our product.

*Precision Roving Compounds, combined with Whitney Silent Chain Horsehead Drives, "Made Their Way—By the Way They Are Made."*

# PRECISION
## Gear and Machine Co., Inc.

115-121 W. Eighth St. Phone 4753

CHARLOTTE, N. C.

*Manufacturers of*

**DUPLICATE MACHINE PARTS**
**GEARS AND SPROCKETS**

*Distributors of*

Whitney Roller and Silent Chains
Bunting Bronze and Babbitt
Boston Gear Speed Reducing Units
Fafnir Ball Bearings
Gates V Belts and Cone Belts

# Come To

The SOUTHERN TEXTILE EXPOSITION and visit our Exhibition at BOOTH No. 102. We will SHOW a Spinning Frame of LONG DRAFT equipped with the ECLIPSE BALL BEARING BOBBIN HOLDER. The ECLIPSE BALL BEARING BOBBIN HOLDER is a big MODERN IMPROVEMENT in COTTON SPINNING. Be sure to look up BOOTH No. 102.

## ECLIPSE TEXTILE DEVICES, INC.

ELMIRA, NEW YORK

*MAKERS OF:*

*ECLIPSE-VANNESS DYEING MACHINES*
*ECLIPSE YARN CLEANERS*
*ECLIPSE BALL BEARING BOBBIN HOLDER*
*ECLIPSE SLUB CATCHERS*

*Southern Representative:*
*J. S. Lutes, P. O. Box 1651, Charlotte, N. C.*

# *Scrubs Clean*

## *Twice the Floor Area that can be mopped by hand*

If you are mopping your mill floors, you are virtually paying for this machine, without getting its advantages. If that seems hard to believe, consider that this amazing FINNELL Machine both scrubs and removes the dirty water . . . it scrubs with two men an area that would take four men to mop . . . and gives you *clean floors*. The yearly saving in labor will in all probability more than offset the annual cost of having the machine in your mill. Ask for details of our lease plan. Be sure to state size of mill and present cleaning method. Demonstration arranged at your convenience. Address FINNELL SYSTEM, INC., 1304 East Street, Elkhart, Indiana.

**FINNELL SYSTEM**
**of FLOOR MAINTENANCE**

See this Machine
Southern Textile
Exposition
April 8 to 13
Booth No. 110

will cause double ends. They should be taken out and straightened in a form furnished with the tools. (The section man of whom I have spoken didn't know what this special tool was for. Maybe there are others like him.)

4. The detector springs should have one round and a half of tightness. Any more or less than this will be unsatisfactory. I often find them with five or six turns. This causes too much pressure against the ends and consequently breaks down many of the ends. Too much pressure of the detector springs will cause grooves to wear in the detectors and grid bars and this causes more ends to break.

5. The detectors, while the ends are running, should be in a half-way position between the grid bars. If they rub the grid bars it will cause double ends and also cause ends to break.

6. The thread clamps should be in good condition. If they are not kept in good condition, the thread guards on the traveler will push the thread down before the knotter receives it. This can be checked by going around with the traveler and seeing whether the knotter receives all of the threads.

All section men I know are careless about the things I have just mentioned. Any overseer can save his company many dollars a year and also increase production by spending one-half hour a week checking on these things. A slow walk around the spoolers and a little watching is all that is necessary.

Our next job, after putting the cylinders in good condition, was getting the travelers in shape. The section man, because he didn't know any better, had gotten many of the parts improperly adjusted; for instance, the spring on the slack take-up had about four times too much pressure on it, and this whacked many of the ends in two after the knotter had carefully tied them. And then there were numerous little rough places where the thread touches the traveler that should have been kept polished to a gleaming sleekness; and the rubber bumpers for the slack take-up were off and gone. This had caused a rough place to form on the slack take-up which in turn cut the thread. I fixed all of these things as I found them and after this was done took the guards off of the gear case and found it packed so full and tight with old oil and lint that it resembled hard rubber.

After the travelers had a thorough going-over and the speed was slowed down to normal, I was proud to see about a 100 per cent improvement in end-tying results.

You probably have noticed that I have said nothing about the knotters in connection with what has been said about the travelers. Well, the knotters in this spooler room were in about as good shape as I have ever seen. The cleaning and oiling and other care of the knotters had been carried on to an almost ceremonious degree. All of this had been done by the night section man who was better experienced. I mention this only because it is the tendency in most mills to concentrate all attention on the knotters while the other parts of the machines are forgotten. As I said before, about a 100 per cent improvement was made, all without touching the knotters.

After the spoolers were put into good shape, prac-


# PLANT OWNERS AGREE!

## Read what just a few of hundreds say

**"We saved 225 tons of coal a year on a boiler developing only 50 horsepower . . . We estimate that production has been increased 10 to 15 per cent."—*Everlastik, Inc., Chelsea, Mass.***

**"A saving in fuel has resulted that amounts to 10 tons of coal per month."—*Chipman-LaCrosse Mills Co., East Flat Rock, North Carolina.***

**"The Morehead delivers the heat returns at a temperature much higher than is possible with pump, consequently our coal consumption is cut to a minimum."—*F. J. Mumm Brewery, Inc., Lockport, N. Y.***

**"The results obtained are beyond expectation. Our trap troubles are over and the savings in fuel has more than paid for the cost of the Morehead."—*Coca-Cola Bottling Co., St. Louis, Mo.***

**"The low cost of upkeep certainly adds another wonderful argument in favor of the Morehead System against a pump boiler feed with its high cost of maintenance."—*Lehigh Whitehall Soap Co., Allentown, Pa.***

### How Morehead Does It!

Hundreds of other steam users report similar experiences with the Morehead System. In our files are records of money saved . . . costs reduced . . . production stepped up . . . quality improved. No matter what you use steam for—heating, power or process work—the Morehead automatically returns *hot* condensate to your boiler, under pressure as feed water. It scientifically drains all pipe lines and equipment. Insures dry radiation at all times.

Remember, a Morehead System costs comparatively little, requires no attention and is easy to install in connection with your present steam plant. So why not make up your mind to get full information. The coupon below will bring it to you by return mail.

**MOREHEAD MANUFACTURING COMPANY**
**DEPARTMENT C DETROIT, MICHIGAN**

---

**MOREHEAD MANUFACTURING COMPANY**
**Department C Detroit, Michigan**

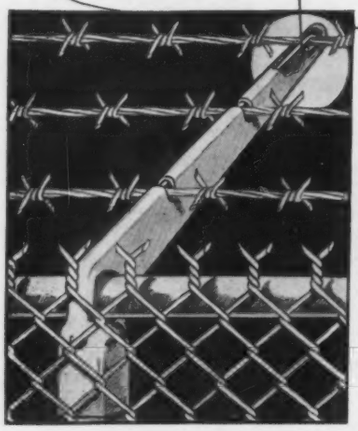
**I'd like to know the experiences of Morehead users and to find out what Morehead methods will save me.**

*Name*_____

*Company*_____ *Address*_____

*City*_____ *State*_____ (582)

# why Cyclone extension arms give enduring service



**THE CYCLONE WAY**—Arm for mounting barbed wire "keys" wire in notches firmly. Easy to release and refasten if wire should need adjusting. Construction provides great strength at top-rail opening.

**THE ORDINARY WAY**—Barbed wire is drawn through metal tongues which have to be hammered down (breaking galvanizing) to hold wire. Adjustments of wire cause tongues to break off. Strength is lacking where extension arm accommodates top-rail.

● **Barbed wire hanging in unsightly loops—arms crooked—and a needless repair bill for you. It need not happen to your fence. It won't happen if you specify "Cyclone". Cyclone's exclusive "Invincible" arms give every owner of a Cyclone Fence the unfailing dependability that he expects from every fitting of this "craftsman-built" fence.**

**This is but one of hundreds of fittings Cyclone has engineered to protect owners of Cyclone Fence from unnecessary repair and maintenance bills. Read how this advanced design in fence is saving money and giving better service in the new Cyclone booklet, "Fence—How to Choose It—How to Use It."**

**GET THIS FREE BOOK ON FENCE!**

**Explains how to choose fence—how to determine values for yourself. It will help you to protect your fence investment, and may prevent costly mistakes. No matter how large or how small your fence requirements may be, get this booklet before you buy. It will save you money. Use the coupon at once.**

CYCLONE FENCE COMPANY
General Offices: Waukegan, Illinois
*Branches in Principal Cities*
Pacific Coast Division: Standard Fence Company
General Offices: Oakland, California

.....MAIL THIS COUPON TODAY.....

Cyclone Fence Company, Waukegan, Ill., Department 4211
Please mail me without obligation a copy of your book, "Fence—How to Choose It—How to Use It."

*Name* _____

*Address* _____

*City* _____ *State* _____

I am interested in fencing approximately.....ft. of ☐ Industrial property ☐ School ☐ Playground ☐ Cemetery property ☐ Residence ☐ Estate.

Cyclone Fence
REG. U.S. PAT. OFF.
Cyclone is not a "type" of fence, but is fence made exclusively by Cyclone Fence Company and identified by this trade-mark
United States Steel Corporation Subsidiary


# ELEVENTH SOUTHERN TEXTILE EXPOSITION

## TEXTILE HALL GREENVILLE, SOUTH CAROLINA

## April 8 to 13, 1935

Everyone engaged in the textile industry is cordially invited to attend the eleventh Southern Textile Exposition in Greenville, South Carolina, April 8th to 13th. New and improved machinery installations, accessories, and supplies will be shown by the leading manufacturers of America. A number of lines not seen before in these exhibitions will be displayed.

April 8th, 9th and 10th the officers of The Textile Foundation and the heads of all American textile schools will be present. Wednesday, April 10th, the Greenville Section of the American Society of Mechanical Engineers will have a divisional meeting. Friday, April 12th, the Southern Textile Association will have an exposition luncheon. Other interesting events will be on the program for the week.

Special railroad rates have been secured in the Eastern territory. From Greensboro on the north, and Atlanta on the south there will be a nightly Pullman car service. Reservations for berths should be made as long in advance as practicable. Ask your railway agent.

It will be be one of the most interesting shows ever held in Textile Hall.

*Please Remember the Dates*

## April 8 to 13, 1935

tically all of the troubles on the warper disappeared, so we had little to do on that. However, I remember that the brakes were giving a little trouble which seemed to disappear after the brake gear case was removed and the packed lint cleaned out.

This experience happened a few years ago. My advice to spooler section men is, "Keep your job in good shape and then no one else will be needed to put it in shape for you."

CONTRIBUTOR NO. 6374.

## Uniform Card Settings to Produce Same Amount of Waste Not Practical

**This man says it can't be done—but found a lot of valuable ideas in trying to do it . . . . . .**

EDITOR COTTON:

On page 35, January COTTON, The Scavenger Roll asked about a uniform card setting to produce the same amount of waste on each card.

Our experience along this line has proved that this is an impossible task. We have, however, gone a long ways in the direction of getting more uniform work and much better cleaning on our cards than we had before we attempted this task. We began by going over each card and carefully checking all settings to see that they were according to our *standard* listed below. We then went back over each card and found that the flat strippings or toppings varied all the way from 16 to 29 grains. This looked disappointing after we had given so much care to the setting of each and every card in order to make sure that they were all set the same.

We decided to follow up this work by weighing up the "toppings" and the "droppings" from each card for two days. This we did and we found that the high ones and the low ones ran pretty consistently the same each day. We then went back over each of the cards from which the waste ran too high or too low, resetting the screens and front plates until we had all our cards doing as near the same work as possible. The reader will no doubt say, "Well, then you are right back where you started." But this plan has helped our work and we get much better results after having gone over our cards as described. We do this now about once a year.

We have found that so many things enter into the question of uniformity of waste on the card, such as the age of the clothing, condition of the licker-in, flats and doffer, as well as the variation in the grinding, setting, speeds, etc. Therefore, with so many varying conditions, it is no wonder that if all front plates are set to a 22, for example, the strippings may still be far apart in weight. While we were checking over our settings, we discovered that when some plates were set and tightened they would "bow" in or out, in the middle. Therefore, they did not have the same relationship to the cylinder all of the way across the card. We found that by filing a little off on each side that they would come down straight in the center when tightened up in place again. We also found that the strippings were better and more uniform by correcting this trouble. On other cards,

Tobaccos are
BLENDED
for better taste

THIS OIL IS BLENDED FOR

*better protection*

Any smoker knows that tobacco flavor is improved by skilful blending. Just as surely, expert blending of several oils produces a lubricant that will protect mechanical equipment far better than any single element oil.

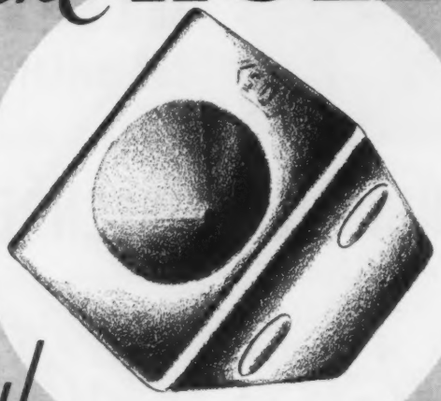
That is why we blend 3-in-One from three different oils —animal, mineral and vegetable. Each oil adds to the protection 3-in-One provides. Actually, when you buy it, you buy three oils that work together to keep parts cleaner, well-lubricated, free of rust.

Mills and factories throughout the nation depend on 3-in-One Oil for this triple protection. They've found that it saves repairs and replacements. Gallon cans of 3-in-One Oil are offered by your wholesaler, or, if you wish, write direct for prices.

3-IN-ONE OIL

THREE IN ONE OIL CO., 170 VARICK ST., NEW YORK, N. Y.

# It's the HOLE



# not the PICKER that makes the PICKER LAST!

**50 TYPE PICKERS** Out-Live All Others Because The Life Saver Hole Distributes the Shock.

A machine cuts out a shuttle point hole more accurately than a loom fixer can—yet the 50 Type Picker is the *only* one with a machine-made hole (patented). • Correctly shaped for the shuttle point and evenly balanced between the rivets and the face of the stick, it allows the *whole* picker to absorb the shock — not just the shell. It also permits a *rocking motion* which saves wear and tear.

*With Telegraphic Speed*

By calling your local Western Union office, you can get the name and 'phone number of the Graton & Knight distributor nearest you. There is no charge for this service

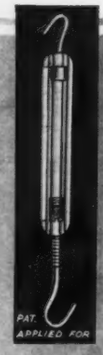
*Learn how to get* the most from the Bonus Zone. See our advertisement on Research Belting in TEXTILE WORLD

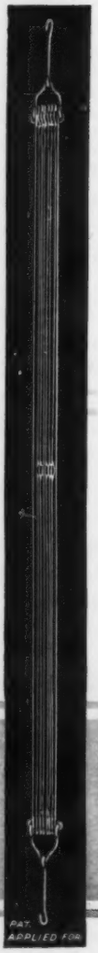
GRATON AND KNIGHT

## 50 TYPE PICKER

THE PICKER WITH THE LIFE · SAVER HOLE

THE GRATON & KNIGHT CO.
WORCESTER, MASS.






# DON'T FAIL *to see* The Century of Progress in LOOM HARNESS EQUIPMENT *at Booth 123*

SOUTHERN TEXTILE EXHIBITION
GREENVILLE, S.C.

You will see the latest creations of the STEHEDCO Engineers — a Draper Loom and Crompton & Knowles Loom in actual operation equipped with the most interesting and indispensable harness devices.

You will see the last word in Electric Harness Warp Stop Motion — the most practical Harness Adjuster — the Flat Steel Selvage Harness Motion — the new all Metal Cushion Reed — Heddles and Frames for every conceivable textile fabric.

Make our booth your Headquarters. Our Officers and Southern Staff will be there to welcome you.

*Steel Heddle Mfg. Co.*
STEHEDCO HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES

2100 West Allegheny Avenue,
Philadelphia, Pa.

*Branch Offices*
Greenville, S. C.
Atlanta, Ga.
Greensboro, N. C.
Providence, R. I.

*Plants*
Philadelphia, Pa.
Greenville, S. C.
Montreal, Que. Canada

*Foreign Offices*
Huddersfield, Eng.
Mexico City, Mexico
Shanghai, China
Sao Paulo, Brazil

QUALITY LOOM HARNESS EQUIPMENT
TRADE MARK
**Stehedco**
HEDDLES · REEDS · FRAMES
*and* HARNESS ACCESSORIES

we found that the "nose" of the front plate had become rounded off in a rather irregular manner, due to years of wear and rubbing at times. Our mechanic rigged up a stand to hold the plates and put the traverse grinding roll, ordinarily used in most machine shops for grinding rollers, etc., on the lathe, so as to grind these plates off to a nicely tapered edge, all the way across from one side to the other.

All these things will help to get more uniformity, but I am still of the opinion that there is no set of uniform card settings which will give the same results all over the card room.

For the benefit of those who may be interested, our settings are as follows:

Flat Comb, 22/1000
Comb to Doffer, 22/1000
Doffer to Cylinder, 7/1000
Flats to cylinder, 9/1000
Cylinder screen to cylinder (back), 18/1000
Cylinder screen to cylinder (center) 22/1000
Cylinder screen to cylinder (front) 34/1000
Stripping plate to cylinder 12/1000
Front knife plate (bottom edge) to cylinder, 22/1000
Back knife plate, (top edge) 22/1000
Licker-in to cylinder, 7/1000
Feed plate to licker-in, 12/1000
Mote knives to licker-in, 12/1000.

CONTRIBUTOR NO. 6367.

## Means of Preventing Slubber Bobbins Tangling When 2-3 Full

EDITOR COTTON:

I note in January COTTON the following problem from "J. R. (ALA.)":

"What is the remedy for the elimination of bobbins of slubber roving tangling after about two-thirds full? The keys are good in all the gears and shafts, and the carriages do not dwell on the changes. The lay is not piling, and is close enough not to allow furrowing. The frames start up with the proper tension, though after running about ten layers the ends become slack, and require taking up a slight amount, and the rest of the doff the ends need no further adjustment. Jumping bobbin gears could be a reason, but they do not jump, and then, the same spindles do not do this on every doff. Some doffs do not have any such bobbins, and then the next doff there are frequently as many as eight that bunch and tangle."

As "J. R." did not state the type of frame, I will take up both kinds and discuss some things that could cause this on English and American type builders. On American type builders, the builder blocks, also the tumbler shaft dog, may have become rounded or worn, letting the tumbler shaft make a slow or lazy change before it can completely clear the builder blocks. Also the builder worm may be worn, letting the builder blocks have a movement with the dogs at times, causing the frames to change slightly later than it should.

On the English builder, either the poker rod or shaft on which the tension gear is placed may be slightly choked, causing the large weight which moves the rack and also the weights which trip the frame at the change to make a slower change at one time than another, which will sometimes cause some bobbins to tangle. If this is the kind of frames "J. R." has, I suggest also that he see if the ratchet catch screw or one of the teeth in the tension gear is worn, causing it to slip by this tooth, when it is at the change, thereby causing the slackness in the ends at that point. Here are some few things to look over on either type of frame:

Spindle steps, carriage slides, balance weight

LOGEMANN
Baling Presses

For Yarn—

Power balers specially designed for making high-density yarn bales, for domestic and foreign shipments. Doors open on all sides, to permit sewing burlap while bale is under compression. Not a single dissatisfied user.

For Finished Goods—

Powerful balers for finished cloth and garments—hand-operated, power-driven and hydraulic. Endorsed by mill-men because of their reliability, pressure and exceedingly low operating cost. Built in a wide range of platen sizes and clearances.

For Waste—

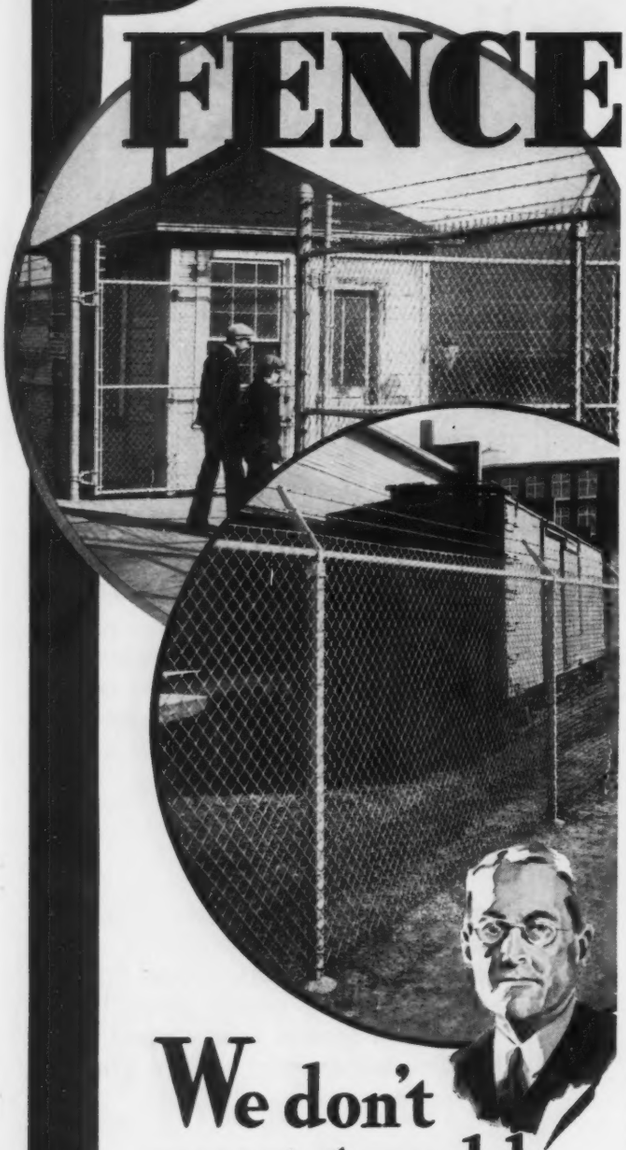
Box type balers for all types of waste. Hand-operated, power-driven and hydraulic. Many sizes, several types. Models to suit special conditions. Some with several rolling boxes, for handling separately various grades of waste.

All Purposes—

Over a period of more than 50 years, LOGEMANN baler engineers developed presses to meet practically all requirements. Mills are invited to write for recommendations on any baling problems. Please outline your conditions and needs.

LOGEMANN BROTHERS CO.
3102 W. Burleigh St., Milwaukee, Wis.

# PAGE FENCE



## We don't want trouble

## . . but if it comes

"there's a good, stout Page Fence around the place that will stop them long enough for better judgment to get in its work. It's been there a long time, too. Just as good today as it ever was. It pays to get PAGE." Why not determine now what it would cost to give your property complete protection? There are 82 Page Fence Service Plants throughout the United States. Write one of the District Offices below for name of Service Plant nearest you.

**PAGE FENCE ASSOCIATION**
**Bridgeport, Connecticut**
NEW YORK PITTSBURGH ATLANTA
CHICAGO SAN FRANCISCO

*America's first wire fence—since 1883*

## Our Individual Service Is Solving Many Sizing and Finishing Problems

With trained chemists, specially equipped laboratories, and men with practical mill experience, our organization is now assisting many mills in turning out products that comply with present-day strict specifications of users of cotton goods.

The mills are finding this individual service of unusual value to them and finding that **NORTH** products are most efficient and economical.

- *for Warp Dressing*
  **WEAVEWELL**
  **SLASHING PRODUCTS**
- *for Finishing*
  **FINISHRITE**
  **FINISHING PRODUCTS**
- *for Tying-in*
  **TY-RITE**
  **FOR EFFICIENT TYING-IN**

Convincing proof of the success of these **NORTH** products is shown by the steady increase in their use throughout the South.

*May we help you solve your problems? Our laboratory, chemists and service men are always at your disposal.*

**FRANK G.**
# NORTH
**INCORPORATED**
*Manufacturing Chemists*
**Mortgage Guarantee Bldg., Atlanta, Ga.**
**Phone Main 3665**
**Plant at Marietta, Ga., Phone 250**

sheaves needing oil. Maybe a tooth worn or out in the following gears causing a dwell of the carriage only when the frame changes and this tooth is at place of change. Tumbler head gearing, lay gearing, center lift gear, twin gears, also the bevel gear which drives the twin gears.

He states that the keys in the gears and shafts are O. K., but I suggest that he remove the lay gear and move the gear on the lifting train stud by hand to see how much back lash he has each way before the gears start to move the carriage. It may be that the key-ways are worn and causing the trouble.

He should see that the frame hand does not stop the frame on the carriage change, as this sometimes causes several ends to run over and come down as well as others that will later tangle before the doff is finished.

If the roving is sliding off of the bobbin, causing this tangle, I suggest that he try starting the ends slightly tighter on the first change by setting the collar where the cone belt will wind slightly further and change the lay gear one tooth smaller, for if the lay is a little too open, the ends will slacken after the frame has run about ⅓ or ½ a doff, even though they start off O. K. He may have to change the tension gear after doing this, then again maybe not.

Just one more thing, if his frames have the English type builder, he may have it tapering more to one end of the bobbin than the other. "J. R." will find an article on page 67 of the September 1933 issue of COTTON which will tell him how to correct this.

A. S. (ALA.)

---

EDITOR COTTON:

I would like to discuss the question of "J. R. (ALA.)" on page 79 of the January issue with reference to bobbins of slubber roving tangling after being about two-thirds full.

The first thing I would do would be to take off all of the casing from the bolster rail, also from the spindle rail. Then I would take five 12x6 empty slubber bobbins, or one for every lifting arm, and set them endwise on the spindle step rail at every lifting arm, and pull the bolster rail down on top of these bobbins, and set the big center gear that drives the carriage back in mesh with the lay gear.

Then take off all the balance chains and weights, and set all the weights down on the floor. Disconnect all the lifting arms so the bolster rail will come down on these 12x6 bobbins so the carriage will be level. Then examine the lifting shaft bearings, and if the bearings and shaft are worn to amount to anything, replace with new bearings and shaft. Be sure to see that the lifting shaft couplings set-screws are good and tight. Also see that the keys and set-screws in the gears in the center drive of the carriage are all good and tight.

Then proceed to pull the lifting arms back up against the small roll on the bottom of the bolster rail, and pull up all the slack in the gears on the lifting shaft that meshes with the lifting arms. Swing all of the weights. Pull the big center driving gear in the center of the carriage out of mesh with the lay gear. Pull the carriage up a little so the bobbins can

"This ring will give us the best possible twisting"

For twisting cotton, silk and rayon where a lubricated ring is called for, the ring with the best lubrication gives the best twisting. You get this with the DIAMOND FINISH Eadie ring because it is lubricated ALL AROUND the circumference. This patented design delivers a controlled supply of oil of ideal viscosity at every point. This assures maximum cleanliness as well as maximum lubrication.

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

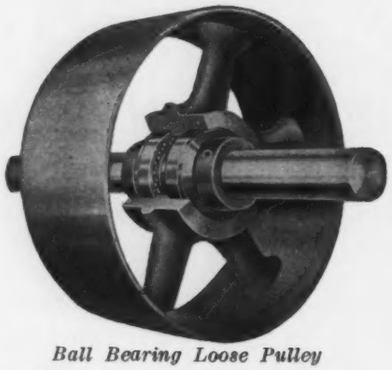
Southern Representative: WALTER L. NICHOLSON, 2119 Coniston Place, Charlotte
Mid-West Representative: ALBERT R. BREEN, 2650 Coyne Street, Chicago

# GOLDENS'
## TRANSMISSION EQUIPMENT

*Blower and Fan Bearings*

Equipped With

## FAFNIR BALL BEARINGS



*Ball Bearing Loose Pulley*

### Helps to Reduce Power Costs

The combination of Goldens' 53 years' experience and Fafnir ball bearing efficiency assure transmission equipment that can be depended upon for longer life and lower power costs.

Write for catalogue No. 11 and prices on Goldens' Drop Hangers; Post Hangers; Pillow Blocks; Loose Pulleys; Blower and Fan Boxes; Flange and Cartridge Units; Spinning and Twister Frame Boxes; or any special application.

### GOLDENS' FOUNDRY & MACHINE CO.

Columbus, Georgia

| | |
|---|---|
| Pulleys | Continuous Dyeing Machines |
| Rope Sheaves | Raw Stock Dyeing Machines |
| V-Belt Sheaves | Cloth Inspecting Machines |
| Size Kettles | Cotton Mill Castings |

# Modernized Fan Equipment PAYS for itself

In many a mill, there is a fan and blower equipment which might have been retired and replaced, at a PROFIT, years ago! Thousands of fans now in service use too much horsepower, require too many replacements, do not quite accomplish their purpose!

Go thru your mill and find out for yourself how many of these antiquated air-movers are on the payroll!

**LOOK FOR IMPROVED PERFORMANCE IN**

**Power Plant Fans—**
**Ventilating Fans—**
**Exhausters—**

*Let us make recommendations*

Buffalo Branch Offices are located in principal cities, and our experienced engineers are at your immediate disposal. Let us send one of them, without obligation, to confer on your air handling problem.

BUFFALO FORGE COMPANY
482 BROADWAY BUFFALO, N. Y.

"Buffalo" FANS for every SERVICE

TAG
Invites you to
BOOTHS 428 & 429
at Greenville
TAG will feature an interesting EXHIBIT OF INSTRUMENTS
for indicating, recording and controlling temperature, pressure, level and flow at the Southern Textile Exposition, Greenville, S. C., Apr. 8-13.
C. J. TAGLIABUE MFG. CO., Brooklyn N. Y.

be taken out. Then the carriage is level.

Then proceed to find the proper lay gear for the hank roving being made. Also see that there is no lost motion in the key that fits the shaft that the lay gear is on. Then see that the key in the hub of the rack gear that the tension gear fits on is tight so there will be no lost motion. Also see that the tension gear is properly meshed with the rack so that the rack will let off on the first change of the carriage. Then regulate the cone belt on the cones so the ends will run right on empty bobbins.

After this is done, check all bobbin and spindle gears to see that they are all properly set so they will not jump. Then keep the bobbin gears properly oiled, also the spindle steps, and check all flyers to see that the presser pads have the proper angle and that the pressers are not too tight. They should be so that they will not bury themselves in the bobbins and tangle them when they get up to some size.

After all this has been done, start the frame up and run one doff so that the proper tension gear for the hank roving made can be determined. Ordinarily tension gears have to be changed as weather conditions change; however, the ends on a fly frame can be regulated so that the ends will run right from the beginning of the doff until the doff is full, by having the doffer tension on the frame and having the ends regulated to start the doff on the empty bobbins.

I think that if "J. R. (ALA.)" will go over his frames as I have described he will not have any further trouble of this kind.

D. C. (N. C.)

## The Qualifications of a Good Loom Fixer

**Here is a pattern. Do you think he has completely solved everything necessary to make a good loom fixer? . . . . . .**

EDITOR COTTON:

A good loom fixer is one of the important hands in the weave room, for on him more than on any one else depends both the quantity and quality of the production. It is necessary for a fixer in order to make a success to be both a fair mechanic and a good weaver. For not only must he understand how the different parts of a loom should be set in order to run to the best advantage but he should also thoroughly understand the manner in which these different parts are assembled.

It should be the object of every fixer to see that the looms in his section obtain the highest possible percentage of production, and in order to accomplish this it is of course necessary to have the looms stopped for repairs as little as possible. The looms should always be kept well oiled. If the parts that are constantly working against each other are allowed to become dry, difficulties are sure to arise. This is the duty of the weaver, except in those mills where a loom oiler is employed, but it should be also the duty of the fixer to see that it is attended to in a mill that is constantly changing from one class of goods to another. The fixer should study the different cloths and learn just what conditions are necessary for the best running of each. Different weight goods require dif-


# Fewer Broken Ends on Twister Frames

Most leading yarn and thread mills find that NON-FLUID OIL insures greater production from twister frames by keeping them in constant trouble-free operation. By reducing traveler friction it cuts down the number of broken ends.

Overstrain on yarn is stopped and much blackened yarn is done away with. This insures more even operation with cleaner yarn of better quality at lower production cost.

There are other savings also: for NON-FLUID OIL lasts longer and needs to be applied only 1-3 to 1-2 as often — thus saving money on both lubricant and application cost.

Make a test right in your own mill. Write today for free testing sample and bulletin. "Lubrication of Textile Machinery."

**New York & New Jersey Lubricant Co.**

Main Office: 292 Madison Ave., New York, N. Y.

Southern Agent

Lewis W. Thomason, Charlotte, N. C.

WAREHOUSES:

| | | |
|---|---|---|
| Chicago, Ill. | Spartanburg, S. C. | Atlanta, Ga. |
| St. Louis, Mo. | Detroit, Mich. | Charlotte, N. C. |
| New Orleans, La. | Providence, R. I. | Greenville, S. C. |

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

*Better Lubrication at Less Cost per Month*

Test

WAK COUNTERS
... without obligations

If you would like to see why WAK* pick counters will assure you maximum loom production and maximum return on investment . . . why WAK counters have replaced 5,000 other counters in the past 18 months . . . why WAK counters are fully guaranteed against defects in material and workmanship . . . then test WAK pick counters, without obligations, right in your own mill on your own looms. A letter, wire or phone call is all that is necessary. Begin counting on WAK counters today.

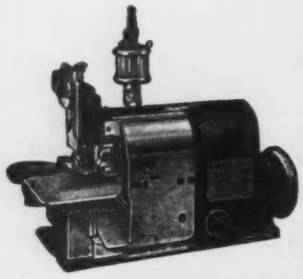
*Reg. U. S. Pat. Off.

WAK INCORPORATED CHARLOTTE, N.C.

YOU CAN COUNT ON WAK COUNTERS

TRADE MARK

MERROW
REG. U. S. PAT. OFF.



HIGH SPEED TRIMMING AND OVERSEAMING OVEREDGING AND SHELL STITCH MACHINES

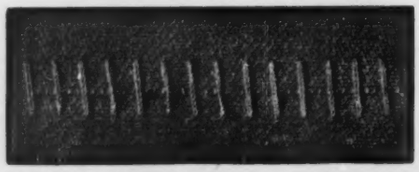
FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES



FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

THE MERROW MACHINE COMPANY
16 LAUREL STREET HARTFORD, CONN., U. S. A.

*Southern Representatives:*

E. W. Hollister, P. O. Box 563, Charlotte, N. C.
R. B. Moreland, P. O. Box 895, Atlanta, Ga.

ferent settings of the parts of the loom. The heavier weaves requiring in most cases more power on the picking arrangement. This in turn necessitates the binders on the shuttle boxes being adjusted to meet the new conditions. The harness straps may need readjustment and the let-off motion should be looked over to see that it is working properly.

Whenever a new difficulty is met with, the fixer, instead of altering different parts with the expectation of fixing the looms by chance, should study out the causes that would result in this particular defect and then carefully study the different parts of the looms, which would cause these conditions. If new difficulties are not thoroughly mastered at the time they are met with, the fixer learns nothing and when the same difficulties come up a second time there will be the same trouble in fixing the looms.

A good loom fixer will constantly be on the lookout for worn-out parts on the looms of his section and be ready to replace them when necessary. By this means broken parts will be done away with and the fixer will not be so much sought after by the weaver. This is bound to be the cheaper method in the end, since a new picker stick or a new lug strap is not very expensive, but broken shuttles, smashes, and lessened production are important causes of lessening profits.

CONTRIBUTOR NO. 6369.

## Another Fly Frame Kink.

EDITOR COTTON:

On page 71 of the December issue of COTTON, in the "HOW OTHER MEN MANAGE" department, I suggested in my article "A Fly Frame Kink" that the readers start a real worthwhile discussion on the problems with which we are confronted from day to day, such problems as managing the help, cutting the cost of production, teaching the operatives to take an interest in their work, etc. Let us have something new for a change.

Meanwhile, I am going to relate another fly frame "kink" which I have never seen discussed in print before.

Several years ago one of my fly frames began to give trouble with the ends kinking up at the flyer just as if the cone belt had broken. This trouble would occur every week or two, every time on the reciprocating change of the carriage. Upon investigation I discovered that the contact gears did not go into mesh at certain intervals as they should, but instead, the gears would fail to mesh, which would lock the train of gears from the bottom cone to the center lift which of course would cause the ends to slacken as if the cone belt had broken.

For the benefit of the readers, I will say that this particular fly frame, prior to the occurrence of this unusual difficulty, had been re-leveled and lined by competent mechanics, and I am not going to say whose fault it was, the machine builders' or the overhaulers', that the two shafts that support these two gears were not in line with each other. I will leave that for someone else to say if they are ever confronted with any trouble of this nature, but I

# . . HELPFUL BOOKLETS FREE . .

This page and the page immediately following present an important service used every month by hundreds of COTTON readers. The listings explain themselves. The Manuals, Reference Books and Catalogs, containing information of unusual value in mill construction and operation, will be sent you without obligation. Read through the list carefully. Then simply fill in on the post card the numbers of those which interest you, and mail the card to COTTON.

*This service is for men engaged in textile manufacturing only. Requests received from those not in the industry cannot be handled.*

## Advertisers in this Issue Offer You . . . . . .

11. **Whitinsville Rings**—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. **The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill."** 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

23. **Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. **"Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

29. **Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. **Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. **Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

62. **Rubber Products for the Textile Industry**—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. **Efficiency and Performance of SKF Roller Bearing Spindles**—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. **Why Cooper Hewitt Light is Better Than Daylight**—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. **Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176**—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. **Monel Metal Equipment for the Textile Industry**—A 50 page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

70. **Fafnir Ball Bearings for One Process Pickers**—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

72. **The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

73. **New Reeves Catalog No. 99**—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

77. **Bulletin S 200**—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. **Dayton Cog Belt Catalog**—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

92. **Silicates of Soda**—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

93. **Metso** — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

95. **Onyx Processing and Finishing Compound Catalog**—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, covering every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. **Suggestions For The Modern Silk and Rayon Throwster**—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

98. **Saving Labor, Material and Power in the Textile Industry**—A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

99. **Bulletin 177, Temperature Controllers.** 48 page booklet describing and illustrating the various types of controllers, charts, valves, etc., and their industrial uses. Foxboro Co., Foxboro, Mass.

102. **White and Light Shade Cotton Fabrics Dyeing and Finishing.** National Oil Products Co., Harrison, N. J.

103. **Throwing Rayon Crepe.** National Oil Products Co., Harrison, N. J.

104. **Warp Sizing.** National Oil Products Co., Harrison, N. J.

105. **Mildew Prevention.** National Oil Products Co., Harrison, N. J.

106. **Cotton System Warp Sizing on Multiple Cylinder Machines**—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. **Complete Information on Alemite Lubrication.** Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. **Some Properties of Starch and Dextrine**—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

**Continued on other Side →**

**Tear Out and Mail N O W**

Fill in on reverse side numbers of the booklets you want and complete information will be sent.

PLACE 1 CENT STAMP HERE

COTTON

1020 Grant Bldg.,

Atlanta, Ga.

# HELPFUL BOOKLETS FREE..

*Continued from Preceding Page*

**110. 3-In-One for Industrial Uses**—showing the many industrial uses and advantages of this oil. Three-in-One Oil Co., 70 Varick St., New York, N. Y.

**115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines**—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

**116. Arcy**—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Virginia.

**117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames**—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

**119—The World's Finest Sewing Machines**—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

**120. Goodyear Mechanical Rubber Goods Catalog** — 40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

**121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries**—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

**122. Water Filters and Filtration Equipment**—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

**124. New Condensed Catalog on Ball Bearings and Power Transmission Units**—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

**131. Houghton's Leathers for the Textile Industry**—This valuable handbook contains 88 pages of data on the proper selection and application of all types of textile leathers, including belting, special spindle belts, round leather belts, loom leathers, mill strapping, leather aprons, etc.—E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**132. Houghton on Sizing Products**—Thirty-two pages of valuable information on sizing of cotton warps and yarns. Gives detailed information on how to conduct sizing tests and contains tables for recording results. It describes the requirements of different types of yarn and gives actual formulas for producing desired finish. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**133. Vim Tred Leather Belting**—A 32 page booklet describing the "non-skid" leather belting made of VIM leather—the toughest material known. This new non-skid belt has a ribbed surface which "grips the pulley like a non-skid tire grips the road. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**134. STA-PUT Lubricants**—A brief description of an entirely new type of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**135. The Pick Method of Weaver Wage Payment**—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

**139. Textile Detergents—Theory of the use of alkalis and control of pH.**—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

**140. Textile Machinery—Improvements in Design and Methods of Lubrication.** A discussion of the problem of lubrication of textile equipment, covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

**141. V-Belt Engineering Data Book**—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts, and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

**142. Houghton's Hand Book for the Hosiery Dyer**—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 West Somerset St., Philadelphia, Pa.

**143. Winders and Winding** — Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

**145. Never Buy Sponges in the Rain**—a booklet outlining the importance of knowing the percentage of moisture in a given textile in the buying and selling of the same and in connection with the working of textile fibres in the process of manufacturing the goods, also showing different types of conditioning ovens for determining moisture content. Emerson Apparatus Co., 174 Tremont St., Melrose, Mass.

**146. Lubrication Cost Recording**—Outlining the factors to be considered in determining correct lubrication costs, and showing a number of typical lubrication cost sheets to assist a mill in installing an efficient lubrication cost system. Gulf Refining Company, Department C, 3800 Gulf Bldg., Pittsburgh, Pa.

**147. Let's "CAN" The Oil Can**—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

**148. Leather Packing**—28 page booklet giving timely hints on the proper selection and installation of leather packings, the various types available, sizes and prices. Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa.

**149. Vim Short-Center Drive with Vim Tred Leather Belting.**—16 page booklet outlining the special requirements of belts for short-center drives and the proper adjustment to give the highest efficiency. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**150. Engineering Data Book on Mechanical Rubber Goods**—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F. Goodrich Co., Mechanical Division, Akron, Ohio.

**151. Details of Brooks Improved Metal Treatment 60 day trial offer**—The Brooks Oil Company, 3304 East 87th St., Cleveland, Ohio.

**152.—Plant Checkup List**—Crane Company, 836 South Michigan Ave., Chicago, Ill.

**153. Descriptive Folder of the New Low Cost Hermas Shear**—Hermas Machine Co., Warburton Ave., Hawthorne, N. J.

**154. Johnson Bronze Bulletin No. 340**—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

**155. Link-Belt Catalog 1274 on the P.I.V. Gear**—giving details of this positive variable speed control. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

**156. Link-Belt Engineering Data Book No. 125**—showing features and giving engineering data on Link-Belt silent chain drives. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

**157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors**—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill.

**158. Norma-Hoffmann Bearings Catalog**—Norma-Hoffmann Bearings Corp., Stamford, Conn.

**159. Corrugated Boxes and How to Use Them**—a reference book for use in the selection and packing of corrugated fibre shipping boxes. Hinde & Dauch Paper Co., 454 Decatur St., Sandusky, Ohio.

**160. Buffalo Forge Bulletin 2944**—giving details of the "PC" conditioning cabinet for cooling and heating. Buffalo Forge Co., 482 Broadway, Buffalo, N. Y.

**161. Fence—How to Choose It—How to Use It**—book explains in detail how to choose a fence, determine values and prevent costly mistakes. Cyclone Fence Co., Dept. 4211, Waukegan, Ill.

---

COTTON, Atlanta, Ga. April 1935

I indicate below by numbers the booklets in which I am particularly interested. Please forward my request for these to the manufacturers.

Fill in here numbers you select from both sides of this page .....

.....

.....

Name .....

Firm Name ..... Position .....

Street .....

City & State .....

Please be sure to list your Firm's Name and your Position on the Post Card. This service cannot be extended to you unless this information is furnished.

**CHECK ITEMS YOU WANT AND MAIL CARD NOW**

will say that it was from that source that the real trouble originated.

In order to convey my point plainly, let us just imagine that the frame in question is in perfect alignment, and the bearings that support the two separate shafts which hold these gears are steadfastly fastened to the sampsons. What is the best way to eliminate this trouble? The first thing I did was to point the teeth of the three contact gears, thinking of course I had remedied the trouble, but to my surprise, in about a week, the same thing occurred again, and all I did then was to set the teeth of the contact gears in half width mesh, and this eliminated the trouble altogether.

I realize that there is room for criticism in what I have said, but I have only tried to convey my point to the readers and I would be glad to hear from other contributors as to their troubles and their remedies.

T. R. (N. C.)

## "I'm a Textile Graduate"—So What?

EDITOR COTTON:

I have been a subscriber to and reader of COTTON off and on for 18 years and from time to time have run across the articles you have published by men who seem to think very little of textile graduates. I am one of those graduates and have had also quite some experience in cotton manufacturing. Before "laying into" textile school graduates, it seems to me that it might be important to consider the class of textile school from which the graduate comes, as well as the individual man himself. There are many technical schools and colleges today giving minor courses in the theory of cotton manufacturing and textile engineering, but these are not standard textile schools and are not equipped with either adequate teaching material or machinery for practical instruction. It seems to me advisable in analyzing this subject to consider each case on its individual merit and with regard to the background of the particular "graduate". I doubt very seriously whether those in charge of such courses as I have mentioned would in any way attempt to convince you that their training is as thorough or practical as that received in a school where the teaching material, machinery and equipment are kept up-to-date and where the instructors are practical men.

Some men seem to have this idea on the subject: the son of a mill agent or other executive, having graduated from a textile school, comes into the mill, hurdles the hard and disagreeable jobs and lands a place in the office as an official. During my experience at school and in the mill I have seen this happen very rarely. To make it clear, in many cases the so-called favored son did not even attend a textile school but perhaps a general college, and yet did pass right on into the office. In fact it has often caused me to wonder why he did not at least attend the textile school, and learn something about the business which he was supposed ultimately to take over.

Contrary to the remarks made by the "anti-graduate" group that the student comes into the mill feeling superior to practical men, let me say here that

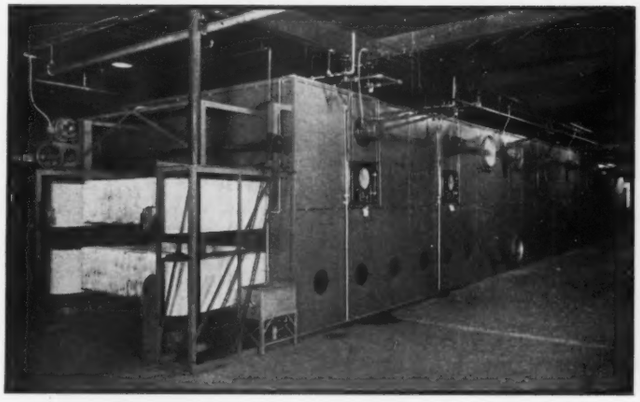

**QUICKER DELIVERIES . . IMPROVED QUALITY**

**FROM**

**NEW PROCTOR SKEIN DRYER**

*says*

FRANKLIN RAYON CORPORATION



• "The dryer illustrated is a conspicuous example of improved equipment that we are using to improve deliveries," says the Franklin Rayon Corporation in recent advertisements which show the Proctor Dryer above in their plant. "It is important to note that this machine does not sacrifice quality in speeding up deliveries. On the contrary, it improves quality, as compared with older types of machines, for it not only dries but also cools the rayon and delivers it reconditioned to normal 11% moisture regain."

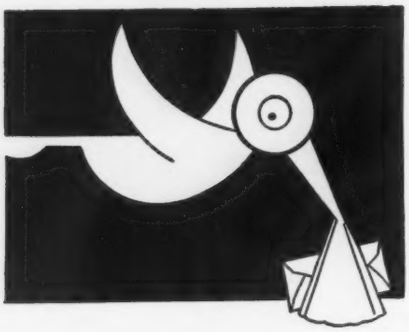
This new Proctor Automatic Yarn Drying, Cooling and Conditioning Machine with Traveling Skein Protector was installed in the Franklin plant within the space formerly occupied by two older automatic machines. It increased output 140%, drying and conditioning 900 lbs. per hour compared with 375 lbs. per hour (drying only) from the two older machines combined. It almost doubled man-hour output, saving 48% in man-hour cost. The saving in space, steam and power, and the general improvement gained, proved this new Proctor Dryer a most profitable investment.

Detailed proof of these savings, with other interesting performance facts, are given in the report of a survey in the Franklin Rayon Corp. plant, endorsed by the management. A copy is yours for the asking.

●

**PROCTOR & SCHWARTZ, INC**

**PHILADELPHIA**



## GOOD ENVELOPES ...like Good Textile Organizations...don't "just happen"

Good envelopes are thoughtfully designed and carefully manufactured. And if they're envelopes from Atlanta Envelope Company, they are made of fresh, clean paper stock, with sure-sticking flaps.

### Have You Tried The FOUR-IN-ONE Pay Envelope?

It's (1) a time and wage statement, (2) a deduction statement, (3) an employee receipt, (4) a payroll envelope. Samples on request.

**For the past 42 years we've been serving Southern mills. Won't you let us take care of *your* envelope requirements —all commercial types furnished speedily and economically.**

**ATLANTA ENVELOPE COMPANY**

505-7-9-11 STEWART AVE., S. W.

ATLANTA, GA.

— ESTABLISHED 1893 —

## Schieren Belting GIVES YOU AN EXCELLENCE OF PERFORMANCE THAT IS POSSIBLE ONLY THRU *Schieren • izing*

•

**In Schieren Belting, you get all of the qualities you seek in a power transmitter—Long Life, High Efficiency, Low Maintenance and Dependability. These qualities result from Schieren-izing, the *Schieren* method of manufacture that gives you extra value at no extra cost and performance that is *proven* by the records of Schieren Belts that have given constant, economical service for the past 30 and 40 years, and more. It will pay you to learn *more* about Schieren-izing.**

•

*Write for Literature and Prices*

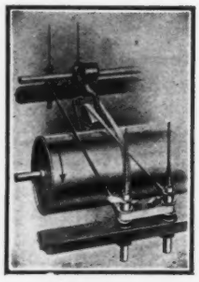
Chas. A. Schieren Company

*Tanners and Manufacturers of* LEATHER BELTING, PACKINGS and TEXTILE SPECIALTIES

Main Office and Factory
31 FERRY STREET, NEW YORK, N. Y.
Dixie Tanneries: Bristol, Tenn.

A SCHIEREN-IZED BELT NEEDS NO "BREAK-IN"

## *"Send it to Gastonia!"* for ECONOMICAL REPAIR SERVICE



If you wish to save on the cost of new parts, and time and delay in shipment, have your equipment repaired or rebuilt in an up-to-date equipped plant by experienced textile experts—just "Send it to Gastonia."

### SPINNING CYLINDERS

We are fully equipped to make new spinning cylinders or repair your old ones, making them as good as new, at a great saving to you.

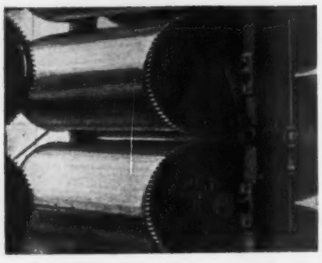
### CARD SCREENS

The rebuilding of card screens is one of our specialties. We have a complete stock of parts for all makes of card screens, as well as picker screens.

### DRYING CANS

Just send your cans to Gastonia and you will receive them back in perfect condition quicker and at a saving.

You take no chances on Gastonia Service. Every job is guaranteed and quick service is assured. Write for full information today.



GASTONIA TEXTILE SHEET METAL WORKS INC.

222 E. LONG STREET
GASTONIA, N. C.

CONVEYOR SYSTEMS — GENERAL SHEET METAL WORK

such is not generally the case. There may be a few isolated examples, but these should not be used for judging the entire group.

When a young man enters West Point in the plebeian class he is made to understand that he is the underdog, which he really is until he has been through everything to get to the top, and in this way all the conceit which he may have had in him is readily taken out.

So also in a practical textile school this is made quite plain even to the day of graduation when the graduate is advised to go into the mill and get some practical work and experience. I was equipped with three years of practical experience in the card room of a thread mill when I entered textile school and yet I did not let that go to my head. I simply had an advantage which served me well during the course. I entered upon the course as though I had never seen a picker or a card. Upon graduating I was further advised to go into the mill and complete my training.

"WASH (R. I.)" has listed from time to time questions which he considers would be baffling to the graduate were he to enter the card room. Does he not think that such things are taught, discussed, and even tried out at the school? I am practical enough to admit that such things as balancing the production of a room are the result of experience only and that the graduate is not fitted to step into the management of a department immediately upon leaving school.

I would like to put a few minds at rest on the question of text books. From what I hear and read there are some laboring under the impression that we pretend to learn the textile business from books. Such is not the case and could not be the case in any practical manner. May I make it plain here that there was not a single text book used or required to be used in the school which I attended, with the exception of one for chemistry for the purpose of reference to the tables of valence and atomic weights?

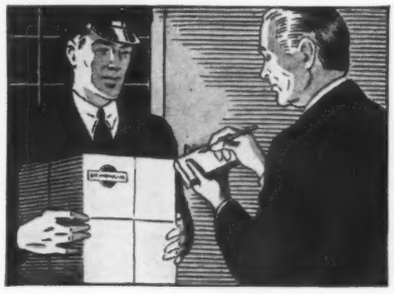
Theory and calculations attendant upon the course were taught in the class rooms, the time for which consisted of only 25 per cent of the total hours; the remaining time was spent on the machines in actual operation and setting. I agree that the graduate should not hope to pass the other fellow in the mill unless he can do the job equally well, and then he certainly should forge ahead and try to apply himself to better things. Constant daily practice and attention to those who know how is the best school in which to complete his education—this combination cannot be beaten. The fellow about whom the critics write is the one who expects too much and who has not absorbed enough of the mill atmosphere to know the way that things are done and to know mill folks. It takes a good deal of experience to learn the human relations part of the game and that is as important as the theory of manufacturing if one is going to handle help.

One critic points out in a recent issue of COTTON that the textile graduate is usually so fixed and in such a position as to be able to get a good portion of his time off for playing golf, etc., but it seems that even the treasurers of today do not spend the time on the links that they once did. That man claims that in this way the graduate has the opporunity to contact men of


Pick up

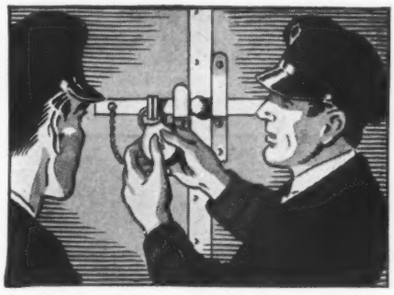
• A nation-wide shipping service is as close as your elbow. A telephone call is all that is required to enlist the extra fast, extra safe Railway Express service. If you are within our wide vehicle zone, a courteous Railway Express driver will call at your very door, give you a receipt for your shipments and speed them on their way.

Delivery



• Your shipments are whisked away on fast passenger trains with Railway Express guarding the shipments every minute of their swift journey. At destination they are delivered direct to consignee by another Railway Express driver who will take a receipt, proving safe, sure delivery.

Dependability



*The best there is in transportation*

• For almost a century Railway Express has maintained reliable pick-up and delivery service. Railway Express service is extra safe and extra dependable because your shipments are in the hands of one organization from beginning to end. Whenever you have anything to ship merely telephone the nearest Railway Express office.

SERVING THE NATION FOR 96 YEARS

RAILWAY EXPRESS AGENCY, INC.

NATION-WIDE RAIL-AIR SERVICE

# Center
## *The last word*

The Center Drive Pick Counter has been proved by exhaustive tests in mill installations. It is outstanding in having every feature desired by mill operators.

Like previous *Productimeter* Pick Counters this Center Drive Counter is very easily installed. It clamps on the loom shaft without drilling or removing any part of the loom.

DURANT MFG. CO.
*Counter Manufacturers for 56 years*

1922 N. Buffum St.
Milwaukee, Wis.

*Counters for all Textile applications.*
*Send for Textile Bulletin*

# Drive
## *in Pick Counters*

Universal
*No more lefts and rights*

Front Shift
*Works as easily as a light switch whether loom is running or idle.*

Positive lock against creeping.

High Visibility.

Sealed against tampering.

No other counter is so rugged.

Rust-Proof throughout.

Reset and non-reset models.

**Productimeters**
THE SPEEDOMETERS OF INDUSTRY

*Eastern Office:*
181 Eddy St.
Providence, R. I.

# ALFRED SUTER

200 FIFTH AVENUE, NEW YORK, N. Y.

SOUTHERN AGENTS

STANDARD CHEMICAL PRODUCTS, INC., CHARLOTTE, N. C.

# SUTER TESTERS

BOOTHS 420-21 SOUTHERN TEXTILE EXPOSITION, GREENVILLE, S. C.

influence and become known, thus further enhancing his chance of obtaining a better position. Granting that opportunity, what does it get him? Suppose he does contact one who he believes can help him and he makes his wishes known in the most graceful manner and according to the best ethics, what then? Might not the man contacted acquire a perplexed countenance and express his feelings in the most modern language: "So What?" This method of getting across does not appeal to me. Instead of the mill official being buttonholed in this manner it would be so much better if he were to watch more closely the progress of the young men in the mill and act on his own initiative.

R. E. C. (CONN.)

## Running Colored Stock Through Draw Frames

EDITOR COTTON:

Here is a little information which may be of interest to some readers of this department. It deals with the problem of running colored stock through drawing frames. This is a true experience and it is possible that some of our friends may at some time or other be up against the same trouble.

Here is the story: We had been in the habit of running all colored stock through a breaker picker and then through two finishers and of course getting a good uniform lap for the cards.

Well, there came a time when one of the "boys" higher up in the organization thought the use of two finishers unnecessary and insisted that one was sufficient. So the order came through and the finisher laps were made as indicated by it. No real difference in the running was noted on the cards, so the man higher up seemed to have made a hit. But wait, we had to pass that stock through the drawing, and then our friend soon noticed the difference by encountering a mess of lumpy drawing sliver which would not run satisfactorily. The alibi of wrong roll settings of course came to light, and all kinds of settings were tried with no really satisfactory results.

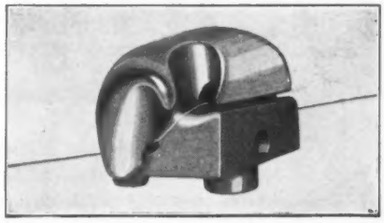
Now, here is where the benefit derived from reading COTTON came to the rescue. It came to my mind that somewhere in the columns of this magazine I had read a discussion on the idea of changing the break draft on draw frames in order to increase the breaking strength of yarn. The discussion took place between several textile executives, and some reported a benefit in making the change in break draft gearing at the foot end of the frame. I took up their suggestions and applied them to solve the problem of eliminating our lumpy sliver, by reversing the gears on the foot end of the rolls, which meant having the 37-28 compound gear gearing with the back and second from back rolls, and the 33-28 gear gearing with the front and second rolls.

Believe it or not, but this change improved our sliver 100 per cent and convinced me that there is something beneficial in that change of gears. I have never made any tests as to its effect on breaking strength, but it surely produced a more even sliver on those draw frames.

While I am on this subject of running colored stock

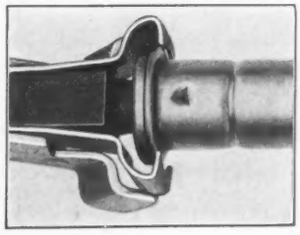

2 *New Features of* WATSON-WILLIAMS SHUTTLES

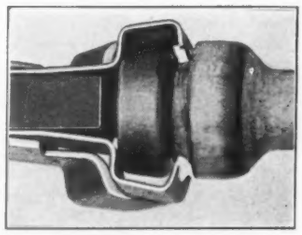
*The One Piece* CAST IRON EYE *for* AUTOMATIC SHUTTLES



**Here is the biggest improvement in automatic shuttle eyes developed for the textile industry in many years. Watson-Williams one piece cast iron eye: (1) Eliminates all pins, bushings and movable parts; (2) Holds the filling down in the thread groove on the 2nd Pick so that it cannot hop out. (3) Creates continuously even tension because the filling hugs the metal. Made with expert workmanship and supervision.**

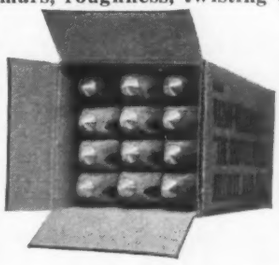
*The Automatic Expanding* EAR CLIP CATCH *for:*





METAL BASE and WOODEN BOBBIN

**On high speed or new type shuttle changing looms, the automatic expanding ear clip catch completely and permanently protects the base of the metal tube or bobbin from mars, roughness, twisting or any injury. You do not have to sort, examine or weigh these FIBRE shuttles. *They are immediately ready for use.* Each one has been thoroughly inspected for uniformity and then specially packed twelve to a carton. Like all Watson-Williams products, these shuttles are fashioned with the utmost care and precision. Only the highest quality of fibre and dogwood is used.**



*Place a trial order NOW, by sending sample shuttle with full bobbin.*

*The* WATSON-WILLIAMS MFG. CO.
MILLBURY, MASS.

**Shuttles, Heddle Frames, Heddles, Hand Cards, and Stripper Cards**

George F. Bahan, Southern Representative
Box 2161, Charlotte, N. C.

VISIT BOOTH 122 AT GREENVILLE, APR. 8 - 13

# PHILADELPHIA

## *The Utmost in Felt*

# CLOTHS

## ROLLER · CLEARER · SLASHER

THERE'S a big difference in felt cloths of various manufacture. Some do not have the correct cushion—some have a weak or loose nap that pulls out easily—some are too porous or not porous enough for textile use.

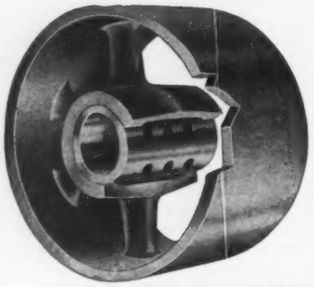
Many textile manufacturers who are particular about perfect and always uniform results from felt are standardizing on PHILADELPHIA Felt. They know they are getting the utmost in felt quality—felt that is made particularly for textile use—every inch rigidly inspected and always uniform.

Be sure of the highest quality and uniformity by specifying PHILADELPHIA for Felt Cloths, Stamping Blankets, Palmer Blankets, Sanforizing and Lapping Cloth for Printing, etc. Let our Southern Sales Manager, Mr. Clarence B. Seal, advise with you on your felt problems.

**PHILADELPHIA FELT COMPANY**

**FRANKFORD, · PHILADELPHIA, PA.**

# MOCCASIN BUSHINGS



### STANDARD EQUIPMENT IN MANY TEXTILE MACHINES

Builders of world-known textile machinery have standardized on them for over 15 years.
We have made broad claims for the mechanical perfection of Moccasin Bushings and have yet to report our first failure.
They require the oiler's attention but a few times a year. They insure every drop of oil reaching the desired spot—the bearing. Nothing but clean oil can reach the bearing surfaces.
And finally—
Moccasin Bushings are *guaranteed* to give the fullest satisfaction in your most *troublesome bearings*.
We have an interesting booklet that gives sound reasons for standardizing on Moccasin Bushings.

MOCCASIN BUSHING COMPANY, Chattanooga, Tenn.
Makers of Brass and Bronze Castings of Every Description

# This is the Age OF SPEED and HIGH DRAFT SPINNING

Ring Travelers of greater endurance are necessary. Wentworth Double Duty, Wentworth Gravity, Gravity Express and Lowboy meet these new requirements.

New Duplex Twister Travelers — C. E. F. Twister Travelers

**NATIONAL RING TRAVELER CO.**

**PROVIDENCE, R. I. - CHARLOTTE, N. C.**

*Southern Office:* — 131 West First St., — Charlotte, N. C. — C. D. Taylor, Southern Agent
*Southern Representatives;* L. Everett Taylor, H. B. Askew, P. O. Box 272, Atlanta, Ga.—Otto V. Pratt, Gaffney, S. C.

through draw frames, I am reminded of another old "kink" that may be of use to someone. Sometimes we have had some stock in process which has been dyed, and assumed a very dry nature, and stock of this nature is sometimes hard to coil in the cans; in fact it will not pass through the coiler tube. Now, possibly someone will say, "Dirty coilers, or tubes; clean them and give them plenty of whiting"; or maybe somebody else has in mind a soaking in hot water or other warming up methods. These have been tried without real success.

There is an old method of obtaining results without having to stand by a frame all the time, and it works. Take the cans before placing under the coiler and fill them loosely with waste; card strips will be O. K. Allow the waste to fill up the space between the can top and the coiler, to prevent any great amount of air from getting near the coiler tube. Start the frame and the slivers will pass through the tubes and coil properly. By this you will obtain practically a half doff which could be transferred to other cans, and the same thing repeated. That is a sure fire method of getting by with colored stock giving trouble as mentioned at the draw frame.

D. E. (R. I.)

## More Ideas for Storing and Handling a Large Variety of Filling

EDITOR COTTON:

"CONTRIBUTOR NO. 6334" has opened a discussion in in regard to his variety of filling, which is very close to all colored goods mills. On page 71 of September COTTON he submitted his question of how best to handle his 55 different kinds of filling, instead of using the 424 old style wooden box trucks that he is now using.

The idea which he suggests of constructing bins for storing the filling in the weave room has an advantage in that humidification could be concentrated on the filling. The chief draw-back to bins is the fact that they are usually catch-alls for various foreign matter such as broken bobbins, broken castings, or even waste paper and refuse. To be kept clean and in good order they must be emptied periodically, and this requires extra labor. Then the cost of constructing the bins and the upkeep would be fairly high. The matter of new shades of each color would also complicate this system.

In preference to bins or his present system of trucks, I would suggest using leatheroid or canvas or even wooden cases about 20x20x20 inches. Such a case would hold about 600 filling bobbins. The empty cases should be kept in the spinning room and used by the doffers to dump the filling directly from their doffing trucks. Flat trucks about 20 inches wide and 50 inches long, with bars on each end would hold about five of these cases, two on the bottom and three on the top. The cases are transported to the weave room when they are full and placed in line with the corresponding color or number of yarn. In this way the cases are rapidly emptied and then taken back to the spinning room and stored. The same trucks are used


# *Announcement*

•

**Mr. Kenneth A. Durham**

1112 Commercial National Bank Bldg.
CHARLOTTE, NORTH CAROLINA

**will be pleased to discuss TEXTILE MILL FINANCING as well as the details of Textile Banking service as applied to the distribution of textile mill products, with any interested Banker or Textile Mill Executive.**

*(Like Selling for Cash, Without Credit Risk)*

•

CORRESPONDENCE INVITED

•

**TEXTILE BANKING COMPANY**

55 MADISON AVENUE
NEW YORK

**HAVE YOU GOT YOURS YET?**

**We have available a limited number of copies of the Cross-Index of Leading Articles published in COTTON during 1934, as announced on page 53, February 1935 issue. If you have all your 1934 copies, and wish this useful index for reference, let us know.—The Editor.**

to carry the empty cases back as are used to carry the full ones to the weave room.

This system is very handy in keeping track of new shades. Closely allied colors of filling are put on different colored bobbins, so they cannot be mixed. All new shades of any color are held in the spinning room until an order is sent from the weave room for them. The overseer of spinning sends an order to the weave room at the end of a lot of filling, and in this way the overseer of weaving knows he will get no more of that particular color until he sends for it. He is thus able to weed out the old shades before any new filling comes down.

It would be interesting to know how many looms "CONTRIBUTOR NO. 6334" has to operate on his stock of 424 large trucks, and approximately how many bobbins each holds. Unless his filling is very coarse, or he has a very large number of looms, it would seem as though his stock could be reduced.

M. W. H. (MASS.)

---

EDITOR COTTON:

This is in reply to the question of "CONTRIBUTOR NO. 6334" with reference to the best way of handling a large variety of filling for the weave room.

My suggestion is to build a conditioning room in the weave room. This room could be used to store the filling if conditioning is not needed. I will illustrate with a room built to the following dimensions: 24 feet long, 18 feet wide, and 12 feet high, with a 3-foot door at one end. In this room build four tiers of bins on each of the 24-foot sides. The tier near the floor will be 5 feet long, 3 feet wide and 3 feet high. Above will be three tiers of ends, 4 feet long, 3 feet wide and 3 feet high. This will be four tiers of eight bins each, or 32 bins on each side, making 64 in all. These bins will be large enough to contain several doffs of filling when filled. The bottom tier of bins being one foot longer than the others will take care of the larger quantities of filling that may be on hand.

In order to place filling in or take it out of the third and fourth tiers, a step-ladder will have to be used, made with a flat top so that a filling box may be placed upon it. The filling man can climb up the ladder and fill his box without very much effort.

At the end of the room opposite the door, install a humidifier about 8 feet from the floor. This humidifier will keep any amount of relative humidity that may be needed to condition the filling properly.

CONTRIBUTOR NO. 6343.

---

EDITOR COTTON:

On page 71 of the September issue, "CONTRIBUTOR NO. 6334" submits a problem of handling 55 different kinds of filling for the weave room. He states that now he brings this filling from the spinning room in old style wooden box trucks, of which they have 424 which take up a great amount of useful space.

This man wanted to know whether your readers thought it would be practical to build bins for storing this filling, and desired any other suggestions on his problem.

There are several factors to be considered.

First, we must find a place to store the filling when it comes from the spinning room. Second, it must be conditioned. Third, we must eliminate handling the filling as much as possible, so as to keep it clean, and we must prevent it from being rubbed and gouged. Fourth, we cannot stack the 400 odd filling trucks on top of each other; that would not be a good practice. Nevertheless, we can stack the beds of doff trucks several high when stacked against the wall.

So, here is what I have in mind: Get fiber doff truck beds, one for each loom in the weave room, and get enough extra truck beds to take care of the filling in stock between the weave room and the spinning room. Have iron stands cast, these to be fastened onto the looms to hold loose, the fiber doff truck beds to be lifted out when emptied, and full ones put back in place. These fiber doff truck beds must be full of holes, so as to condition the filling without removing it from the doff truck beds. Here is the idea: The filling is doffed into the fiber doff truck beds at the spinning frame, and goes all of the way to the loom without being taken from the truck beds. Thus, the filling is handled only at the spinning frame and at the loom, when the weaver fills the battery.

Now, how are we going to do this? By means of a filling conditioning room. If there is available between 10 and 100 feet distance between the spinning room and the weave room, build the conditioning room to extend from the spinning room to the weave room, and have a conveying belt carrying these doff truck beds from the spinning room to the weave room through the filling conditioning room. The doff truck beds should be placed on the conveying belt by the doffer boy, who then pulls a lever and starts the conveying belt to moving along at a speed that will carry the doff truck bed through the filling conditioning room in, say, five minutes. A boy located at the entrance of the conditioning room in the weave room could receive these doff truck beds after they have passed through the filling conditioning room and stack them up by the wall in the weave room several high, to remain here until the filling is needed at the looms. Then the doff truck bed is placed on the stand that has been provided to receive it at the loom.

Now the filling is conditioned and ready for weaving, and has not been handled since it was doffed at the spinning frame.

Of course the speed of the conveying belt will vary according to the distance through the filling conditioning room, since about five minutes is sufficient to condition a doff truck bed of filling, or as many as the conveying belt will carry through at one time. The conditioning room must have a sufficient number of steam and water atomizers, to keep an even spray per cubic foot of air space throughout the conditioning room. The temperature should be kept around 120 degrees F, to be regulated by cut-off valves near each entrance to the filling conditioning room.

CONTRIBUTOR NO. 6339.

Model HH-PW Machine

Automatic Rib Body Machine
(16-18-20 needles per inch)

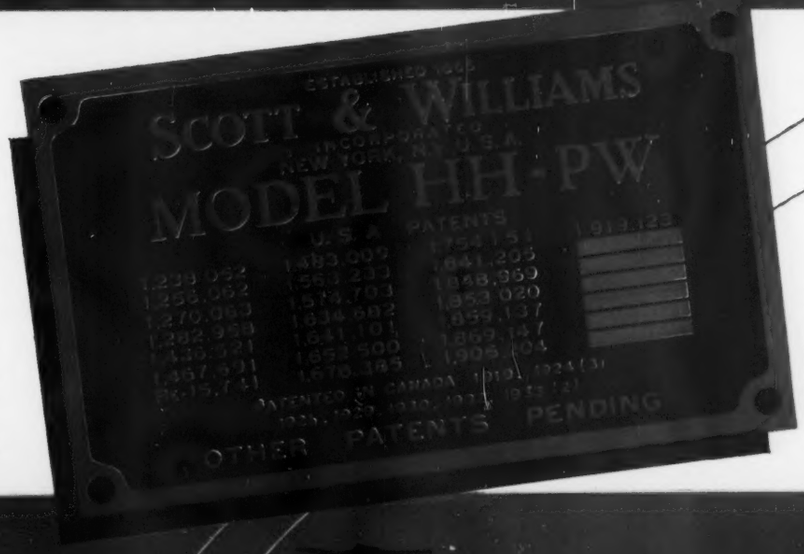
Model ES 36 wrap yarns

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

**COMPLETENESS . . .**
**characterizes the line of knitting machinery shown on these two pages . . .**

**MODEL HH-PW** Combines the HH features of economy with comprehensive true panel wrap patterning.

**AUTOMATIC RIB BODY MACHINE** Extra fine gauge rib fabrics—1 x 1 or 2 x 2, plain or automatically tucked and shaped—for quality underwear.




**MODEL ES** Distinctive wrap patterns in single, or multiple, needle stripes, and in three-color clox or all-over designs.

**MODEL HH** For economical manufacturing of endless varieties of float-stitch stripes, clox, and all-over patterns for half-hose.

**MODEL K** With Elastic Welt, Square Heel, and knit-to-fit leg, ankle, instep, and toe—produces ladies' hose—plain or fancy—excellent in quality and profitable to merchandise.

**MODEL HH-NRP** A new machine for perfectly plaited (needle deflective method) twenty-five step patterned half-hose—either multi-colored Argyles, all-over patterns or delicate stripes and clox—and with complete elasticity of fabric.

Model HH 25 Step Spiral

Model K Gussetoe 25 Step Spiral Machine (Automatic Inturned Welt)

Model HH-NRP

Model 80W SHOG

Model L

VARIETY • EFFICIENCY • ECONOMY

. . . BACKED BY A

70 YEAR REPUTATION

FOR LEADERSHIP

**MODEL 80W SHOG** Facilities for using 80 wrap yarns, with patterning possibilities of 25 steps plus *shogging* backward and forward of wrap yarns, produce blended and contrasted wrap color effects in unlimited variety of clox and all-over patterns.

**MODEL L** With a wrap yarn for *every* needle, shogging, and scope of 15 step wrap patterning—this machine (built 200 needles or coarser) produces the exclusive fancy half-hose (especially wool combinations) previously imported from Europe.

STANDARD TRUMP

*Established 1872*

**STANDARD-TRUMP**

BROS. MACHINE CO. INC.

366 BROADWAY, NEW YORK, N. Y.

**MODEL H** The ideal machine for all gauges—including 70 gauge—of infants' and children's anklets, half-sox (plain or striped) and full length ribbed hose—excelling in production and simplicity of operation.

**KOMET** Built in all diameters and gauges (as fine as 3½" 240 needles) required to produce any combination of ribs in tops and legs of ribbed-to-the-toe hosiery.

Model H

Komet (English Broad Rib)

# Knitting Industry Awaits Exposition and Convention at Philadelphia

THE stage is set for the twin events in the hosiery trades—the Knitting Arts Exhibition and annual convention of the National Association of Hosiery Manufacturers and the Underwear Institute, the exposition sponsored jointly by these major divisions of the knitting industry. Reports from scattered exhibitors and manufacturers and distributors of knit goods emphasize the paraphrased slogan, "When better knitting arts exhibitions are held the organized knitters and allied machine builders will hold them."

It was not long after Exhibition Manager Albert C. Rau announced an opening date for reserving exhibition space that more than 75 per cent as much space as was occupied last year had been reserved for the 1935 show, which will be held in the Commercial Museum Building April 22 to 26 inclusive. Reasons for a broader interest on the part of exhibitors were readily traced to curiosity of manufacturers of knitted fabrics and commodities in general, in developments in mill equipment during the several years when machine buyers were having a holiday as related to new installation. Besides, it transpires, so little installation was provided during several years, that new equipment became a necessity, and evidence of this cropped out since the beginning of 1935, in a revival of inquiry as to what machine builders claimed for their later models. This increasing interest at once suggested a more diversified exhibition.

Earl Constantine, of the Association . . .

A. C. Rau, manager of Exhibition . . . .

Floor plans for the 1935 knitting arts exhibition vary little, if any, from those of 1934, it is officially stated. The converging of aisles for exhibitors' booths onto a central plaza proved the most successful innovation in the arrangement of the show that had been attempted in many years. The idustrial vista thus presented was liked by exhibitors and visitors. An increase in the number of both at the coming show is ascribed in part to the recent four months of a near boom in the hosiery industry and the propitious start of the spring season for hosiery and underwear.

Not only will there be on parade down to the minute innovations in women's silk stockings, as a perhaps outstanding item, but it is understood some of last year's creation in mechanism for producing the very modern will be shown. Ringless hosiery may be expected to prove an outstanding item of interest to manufacturer and distributor, and discriminating women. Some of the exhibitors are scheduled to present a diversified showing of knee-high stockings. And it need not be a surprise should rayon interests present evidence of even greater progress in the adaptation of synthetic yarns to a broadening field than was submitted in last year's startling exhibits. In this respect, the Raw Silk Committee of the Hosiery Association will present an ocular demonstration of its stewardship in promoting means for the better selection of raw silk, to the end that improved results are obtained. Its exhibits will combine a showing of the work in its research field.

While it could not be learned from authoritative sources whether the 3-carrier attachment for producing ringless stockings would be on exhibition as representing one extreme, the Textile Machine Works will have in operation a flat knitting frame that was in production 150 years ago. While it still is suitable for demonstrating purposes and for linking the early days of mechanical knitting with the present process, there is no doubt of its obsolescence. It has, however, powerful advertising value, in which respect it might be compared with the present high speed cost-reducing modern flat knitting machine for hosiery, as representative of the other extreme, in economy of operation.

Speed consistent with safety and perfection of operation is the desideratum in considering replacement in full-fashioned hosiery knitting and, according to machine builders, a fair volume of business in knitting equipment looms as an assured result of the exposition. Sentiment in this respect, it seems not inappropriate to say in this connection, was fairly well expressed in a manufacturer's off-hand comment, "You may have old machines at the lowest possible cost as an installation, and be able to maintain the lowest possible overhead, and I will get under your absolute minimum with a few of those high speed machines that are going into some old mills this year." This was his reply to an offer of a few standard machines which were absolutely new in the early months of the present decade.

In the seamless machine field demonstrations during the exposition will run to an exhibition of the progress made since last year in the laying in and knitting in of lastex and elastic yarns in various forms. Some predict that, in many respects, exposition demonstrations of circular machines for knitting pattern and multi-color hosiery will show greater progress than in any other division of knitting.

The respective conventions of the Underwear Institute and the National Association of Hosiery

# Mr. Mettler says:

« KAUMAGRAPH DRY TRANSFERS HAVE OUR PREFERENCE »

**Interwoven** REG. U.S. PAT. OFF. **is one of the most notable names in men's socks—in the great metropolitan stores, in the smaller shops in the cities and the small towns, Interwoven will be found on sale. The Interwoven Mills, Inc., with five great mills, is one of the world's largest manufacturers of men's socks. Mr. John Wyckoff Mettler, the President, said: "Quality and value in every detail have achieved Interwoven's position; therefore in the purchase of all supplies, we insist upon the same factors. Kaumagraph Dry Transfers have our preference because they measure up to our high standard."**

***For Interwoven, Kaumagraph has developed a special transfer composition to meet the exacting requirements of their extensive line. kdt's can be furnished for any material to provide dye resist, permanent, semi-permanent or temporary identification. For any marking problem; for fine lithographed packing or advertising; for embossed seals, consult us. A Kaumagraph Identification Specialist will call on request.***

KAUMAGRAPH, NEW YORK

REPRESENTATIVES IN PRINCIPAL
TEXTILE CENTERS OF THE WORLD

Copyright 1935 by Kaumagraph Co.

Manufacturers seem likely to develop considerable interest in the operations of the codes of the industries represented by the two organizations. April 25 has been set as the date for the Underwear Institute meeting, in the ballroom of the Exhibition hall. This session will include a "getting together of the Code Authority with the Underwear and Allied Products Manufacturing Industry.

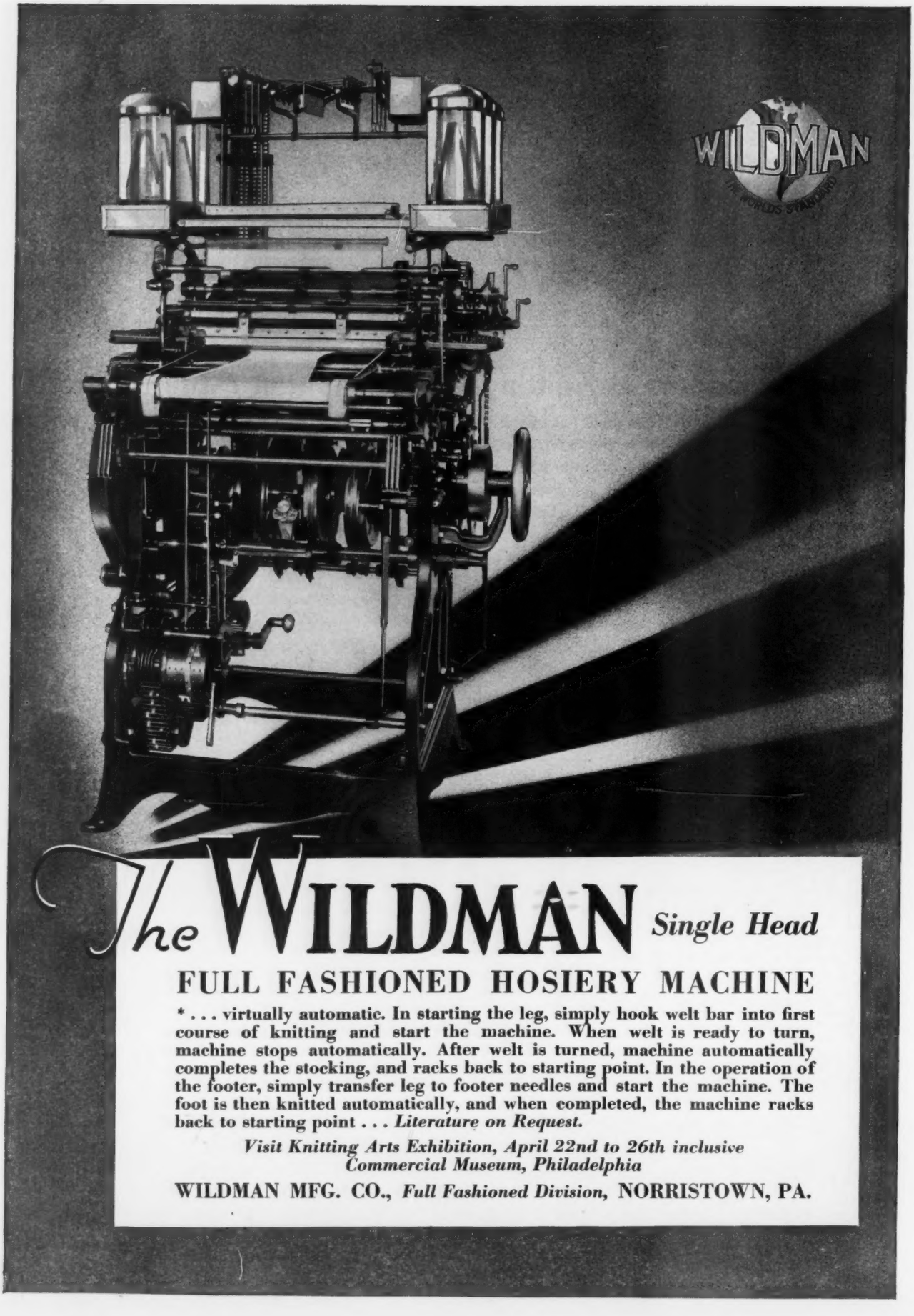
The Hosiery Code Authority is planning to call a general industry conference probably to take place Monday, April 22, to be followed by conferences of various branches of the industry. Among other things to be considered at the branch conferences, will be the re-election or altering of the branch advisory committees called for under the Code. The full fashioned branch will also consider the adoption as official standards for the industry of the report of the committee on standards of construction for ladies' full-fashioned hosiery. Other groups planning conferences on Monday afternoon include: half-hose. Infants' hose, ladies' seamless hose, golf hose, cotton hose and wool hose manufacturers.

The hosiery manufacturers' association will hold its annual convention at 10:30 A. M. Wednesday, April 24. The meeting will be taken up largely with reports of the officers, and the regular election of new directors and officers for the Association, and other regular business.

# List of Exhibitors at Knitting Arts Exhibition April 22 to 28

Following is a practically complete list of exhibitors at the Knitting Arts Exhibition, as available at press time:

| | Space Number |
|---|---|
| AAA Silk Laboratory, Inc. | 51A |
| Aberfoyle Mfg. Co. | 274-275-280-280A-281-281A |
| Adelphia Textile Co. | 343 |
| The Allentown Bobbin Works | 152 |
| American Aniline & Extract Co., Inc. | 219 |
| American Bemberg Corp. | 251 & 260 |
| American Enka Corp. | 196 & 197 |
| American Silk Spinning Co. | 167 |
| The American Silk & Rayon Journal | 139 |
| The American Thread Co. | 198 & 199 |
| American Wool & Cotton Reporter | 38 & 39 |
| American Yarn & Processing Co. | 348 & 349 |
| Jos. Amon | 183 |
| Edward R. Ammon, Inc. | 32 |
| Arrow Needle Co. | 8 |
| The Atwood Machine Co. | 211-228-241 |
| Bausch & Lomb Optical Co. | 371 |
| Boger & Crawford | 248-249-262-263 |
| Boshamer & Co. | 34 |
| H. Brinton Co. | 117-118-119-120-121-122 |
| Brugger Winding Co. | 177 & 178 |
| H. W. Butterworth & Sons Co. | 327 & 364 |
| Cannon Mills, Inc. | 243 |
| Clover Leaf Mfg. Co. | 359 |
| Columbia Narrow Fabric Co. | 170 |
| COTTON | 354 & 355 |
| Chas. Cooper Co., Inc. | 310 & 311 |
| Crawford Mfg. Co. | 278 |
| Dixie Mercerizing Co. | 220 & 221 |
| Dubied Machinery Co. | 377 |
| The Duffy Silk Co. | 356 & 357 |
| Jno. Dunlop's Sons, Inc. | 370 |
| Duplan Silk Corp. | 322 & 323 |
| Dupont Rayon Co., Viscose Process Dept. | 205-206-233-234 |
| DuPont Rayon Co., Acele Dept. | 204 & 235 |
| Ewing Thomas Corp. | 33 |
| Fairchild Publications | 366-367-396-397 |
| W. F. Fancourt & Co., Inc. | 185 |
| Fidelity Machine Co. | 245-246-247-264-265-266 |
| J. A. Firsching, Inc. | 334 & 335 |
| Fletcher Works, Inc. | 215 to 218, inc. |
| The J. B. Ford Sales Co. | 291 |
| Foster Machine Co. | 296-297-319 |
| Franklin Needle Co. | 158 |
| Friedberger-Aaron Mfg. Co. | 18A |
| General Electric Co. | 154 & 155 |
| General Electric Vapor Lamp Co. | 156 & 157 |
| Grand Rapids Textile Machinery Co. | 129-161-162 |
| Grove Silk Company | 9 & 10 |
| Hampton Co. | 214 & 225 |
| Oscar Heineman Corp. | 298 & 317 |
| The Hellwig Silk Dyeing Co. | 195 |
| Hemphill Co. | 99 to 104, Inc. |
| John W. Hepworth & Co., Inc. | 200 |
| Louis Hirsch Textile Machines, Inc. | 207-208-209-230-231-232 |
| Alfred Hofmann, Inc. | 300-301-314-315 |
| The Industrial Dryer Corp. | 140 & 141 |
| Industrial Rayon Corp. | 85 to 88, Inc. |
| International Nickel Co., Inc. | 13 & 14 |
| Loyal T. Ives Co. | 163 |
| Jacquard Knitting Machine Co. | 304 & 305 |
| Jasper-Groz Needle Co., Inc. | 379 |
| Johnston Mills Co. | 210 & 229 |
| W. H. & F. Jordan Jr. Mfg. Co. | 133 |
| Kaumagraph Co., Inc. | 81 to 84, Inc. |
| Knit Goods Weekly | 131-132-159-160 |
| The Knit Goods Publishing Corp. | 77-78-79-80 |
| Laconia Needle Co. | 191 |
| W. T. Lane & Brothers | 289 |
| R. K. Laros Silk Co. | 52 & 53 |
| Percy A. Legge | 347 |
| Lestershire Spool & Mfg. Co. | 341 |
| Wm. A. P. MacKnight | 290 |
| Malina Co., Inc. | 336 & 337 |
| Markem Machine Co. | 299 & 316 |
| Mayfair Yarncraft | 192 & 193 |
| C. R. McGinnes | 325 |
| Merkel Bobbin Co. | 184 |
| The Merrow Machine Co. | 340 & 351 |
| Clarence L. Meyers, Inc. | 302-303-313 |
| James E. Mitchell Co. | 318 |
| L. P. Muller & Co. | 186 |
| The Narrow Fabric Co. | 213 & 226 |
| Onyx Oil & Chemical Co. | 358 |
| Paramount Textile Machinery Co. | 239-240-254-255-256-257 |
| Penn Worsted Co. | 189 |
| The Permutit Co. | 365 |
| George B. Pfingst, Inc. | 312 |
| The Philadelphia Drying Machinery Co. | 182 |
| Philadelphia Metal Drying Form Co. | 169 & 194 |
| Max Pollack & Co. | 168 |
| The Procter & Gamble Distributing Co. | 172 |
| Proctor & Schwartz, Inc. | 252-253-258-259 |
| The Reece Button Hole Machine Co. | 338 & 339 |
| Robert Reiner, Inc. | 368-369-394-395 |
| Rochester Engineering & Centrifugal Co. | 223 & 224 |
| Royersford Needle Works, Inc. | 352 & 353 |
| San-Knit-ary Textile Mills | 37A |
| Sauquoit Silk Mfg. Co. | 190 |
| Scholler Bros., Inc. | 187 & 188 |
| Harry Schwartz | 36 |
| Scott & Williams, Inc. | 105 to 116, Inc. |
| Sees & Faber Co., Inc. | 15 & 16 |
| Sellers Mfg. Co. | 330A |
| Silk Grading & Testing Laboratory, Inc. | 326 |
| Singer Sewing Machine Co. | 201-202-203-236-237-238 |
| Smith Drum & Co. | 23 to 30, Inc. |
| Southern Textile Machinery Co. | 344-345 346 |
| Earl M. Spencer | 330A |
| The Spool Cotton Co. | 342 |
| Standard Coosa Thatcher Co. | 244-250-261 |
| The A. M. Tenney Associates, Inc. | 279 |
| Textiles, Inc. | 242 |
| Textile Machine Works | 267 to 270, inc.<br>285 to 288, inc. |
| Textile World | 89-90-91-92 |
| Tompkins Bros. Co. | 222 |
| The Torrington Co. | 276-277 |
| Tubize Chatillon Corp. | 380 & 381 |
| Union Special Machine Co. | 272-273-282-283-283A<br>283A-294-295-320-321 |
| United Elastic Corp. | 324 |
| United States Rubber Products, Inc. | 382-383-384 |
| U. S. Testing Co., Inc. | 392A |
| U. S. Textile Machine Co., Inc. | 331-360-361 |
| Universal Winding Co. | 123 to 128, inc. |
| Victor Ring Traveler Co. | 50 |
| The Viscose Co. | 292 & 293 |
| Warwick Chemical Co. | 378 |
| William Whitman Co., Inc. | 328 & 329 |
| Wildman Mfg. Co. | 93 to 98, inc. |
| Willcox & Gibbs Sewing Machine Co. | 278A-279A-306-307-308-309 |
| Wolf Bros. | 37B |
| Jacques Wolf & Co. | 350 |
| Thos. Wolstenholme Sons & Co., Inc. | 332 & 333 |



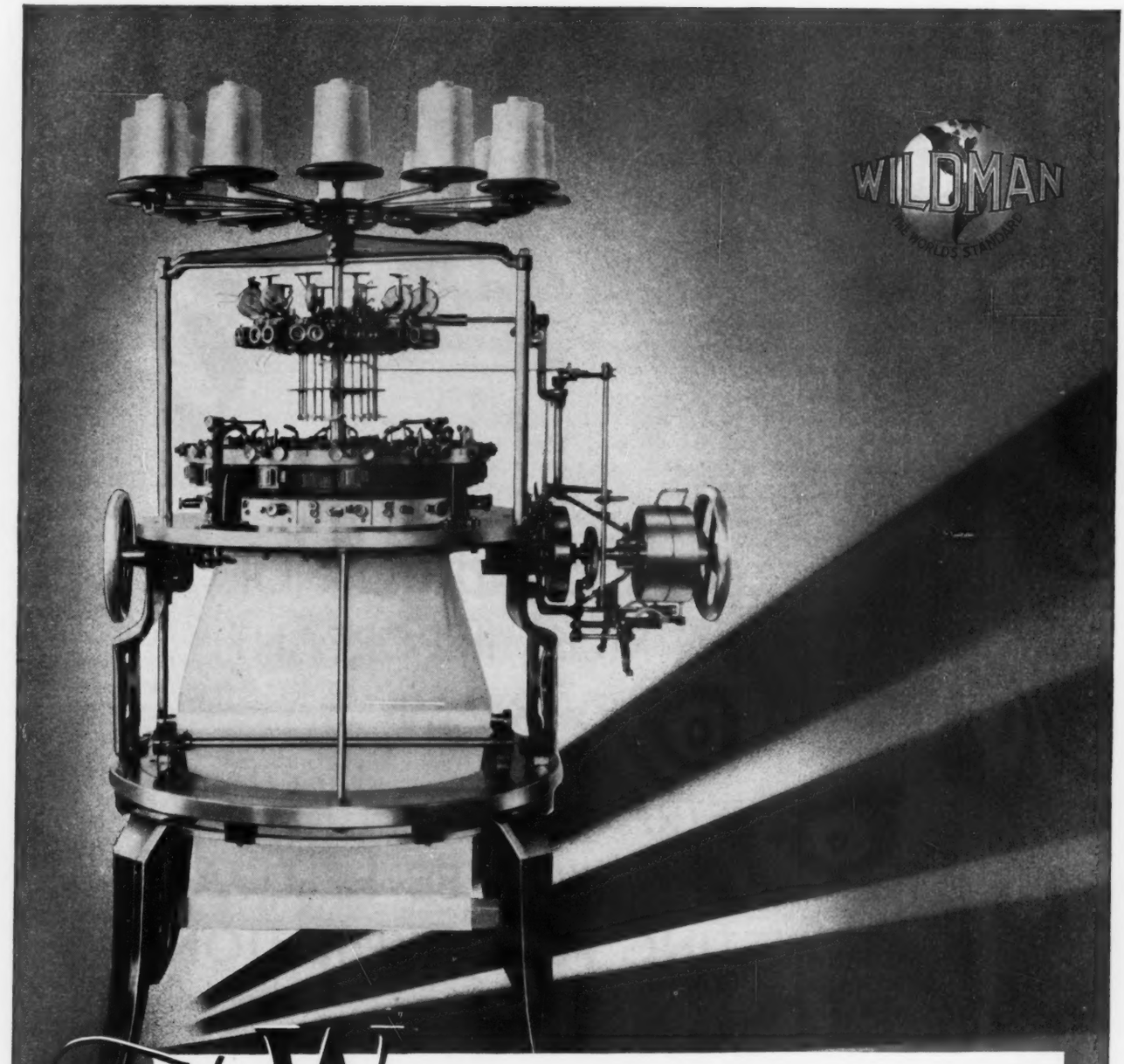

*The* WILDMAN *Single Head*

FULL FASHIONED HOSIERY MACHINE

* . . . virtually automatic. In starting the leg, simply hook welt bar into first course of knitting and start the machine. When welt is ready to turn, machine stops automatically. After welt is turned, machine automatically completes the stocking, and racks back to starting point. In the operation of the footer, simply transfer leg to footer needles and start the machine. The foot is then knitted automatically, and when completed, the machine racks back to starting point . . . *Literature on Request.*

*Visit Knitting Arts Exhibition, April 22nd to 26th inclusive*
*Commercial Museum, Philadelphia*

WILDMAN MFG. CO., *Full Fashioned Division,* NORRISTOWN, PA.



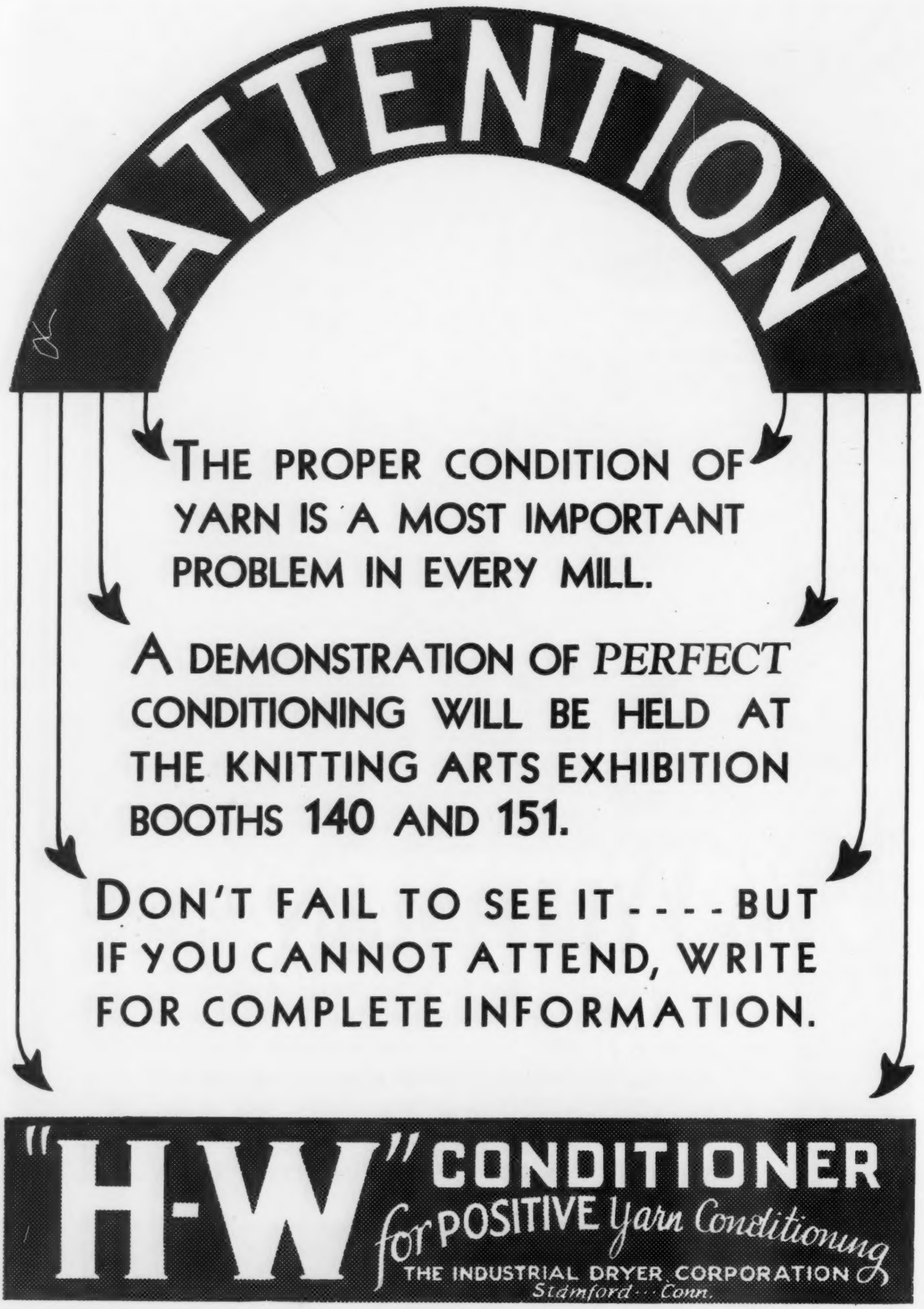

The WILDMAN

SPRING NEEDLE
BODY MACHINE
Style F B S-S-6

. . . meeting the need for a fine gauge machine that can be easily, quickly changed from one pattern to another. . . . May we send you a swatch of samples showing wide range of patterns made on this machine?

*Visit Knitting Arts Exhibition, April 22nd to 26th inclusive*
*Commercial Museum, Philadelphia*

WILDMAN MFG. CO., NORRISTOWN, PA.


ATTENTION
THE PROPER CONDITION OF YARN IS A MOST IMPORTANT PROBLEM IN EVERY MILL.
A DEMONSTRATION OF PERFECT CONDITIONING WILL BE HELD AT THE KNITTING ARTS EXHIBITION BOOTHS 140 AND 151.
DON'T FAIL TO SEE IT - - - - BUT IF YOU CANNOT ATTEND, WRITE FOR COMPLETE INFORMATION.
"H-W" CONDITIONER
for POSITIVE Yarn Conditioning
THE INDUSTRIAL DRYER CORPORATION
Stamford · · Conn.

# Dyeing and Bleaching Pigmented Rayon—and—Mercerized Cotton Hosiery

By W. Ashton Daniel
Dyer, Knitting Dept., Wiscassett Mills Co.

IF ONE tried to cover the field of dyeing and bleaching rayon hosiery, a great deal of territory would have to be covered because every type of rayon does not dye or bleach alike. For that reason the writer will endeavor to show how pigmented rayon is dyed and bleached in order to get the best possible unions between the mercerized cotton top or foot and the pigmented treated rayon boot. Pigmented rayon is a very dull luster rayon which is treated by a special process and sold by several rayon plants under their special trade names. It is used quite extensively because of its very dull luster. This type of rayon may easily be dyed by the one-bath method or the split-bath method, using of course the best level dyeing colors, but one is able to have better control of the unions if the split bath method is adhered to.

If the hosiery is to be made water repellent it is advisable to give the goods a pre-scour in order to wash out all the rayon oil and foreign matter that the hose take up during the process of manufacturing. If these oils are not removed before they are finished with a water repellent, dark spots will appear caused by the water repellent coming in contact with the oil which has not been washed out in the pre-scour. It is almost impossible to rinse the hose enough to eliminate this oil, if at first the goods are not scoured.

### Split Bath Method

In the split bath method five per cent of a good scouring oil is used and the goods entered at a boil and boiled for fifteen minutes. It is generally understood that by entering silk at a boil sleaziness is greatly reduced. It is also true in dyeing rayon. The bath is then dropped and a fresh bath made up using six per cent of a good degumming oil and the temperature brought to 100 degrees F. Here a question may arise as to why a degumming oil is used when there is nothing to degum? That is easily answered in one sentence. Better level dyeing, just as economical, and a better scour is obtained.

After the temperature is brought to 100 degrees F, the dissolved dyestuffs are entered very slowly. The goods are run in the dye for ten minutes and then the steam valves are opened. The union between the rayon and cotton can easily be manipulated at this point. Nearly all the best dyes used for cotton and rayon hosiery will dye the cotton much heavier than the rayon in light shades and on dark shades the rayon will dye much heavier. This is a characteristic of direct dyes and it is up to the dyer to use some method to overcome this difficulty. For this reason, on very light shades such as on the Standard Color Card for Spring 1935, three per cent salt is added five minutes after the dye. This addition of salt tends to throw the dye on the rayon. It is up to the dyer to determine just which shades need this first salt and which do not. If the shade is a medium or heavy shade this first salt is not needed. The machine is then brought to a boil, salted in twenty minutes and sampled in twenty minutes. If the shade is correct overflow the machine sufficiently and cool. Rinse the hose well and prepare the finishing bath at 90 degrees F.-100 degrees F. Three per cent of a good water repellent compound in the finishing bath tends to smooth the stitches and cover up a large amount of sleaziness.

### One-Bath Method

The one-bath method in dyeing pigmented treated rayon and cotton top hosiery is much easier, saves a great deal of time and apparently better results are obtained. Time and care must be taken that the dye and salt is added very slowly at the proper time. A good degumming oil is also recommended for this method. The goods are entered at a boil in a bath containing seven per cent degumming oil and three per cent scouring oil. The goods are run in this bath for ten minutes in order to get the hose thoroughly wet out and then the dissolved dyestuffs added. The goods are then run for twenty minutes more and salted; twenty minutes and sampled. If shade is correct overflow machine well, cool and extract. For very light shades and when the hose is to be treated with a water repellent compound this method can not be used, but where one has a medium or dark shade and does not finish the rayon hose the one bath method is more practical, saves time and money and speeds up production considerably.

### Bleaching

The process of bleaching pigmented treated rayon and cotton top hosiery is practically the same as for other types of rayon. The difference comes in the bluing. The following formula has been found to give the best results: Enter the goods in a boiling bath made up of five per cent degumming oil. Run for five minutes in order to wet the goods thoroughly. For a 100-pound machine use 12 pounds 100 volume hydrogen peroxide and 5 pounds silicate of soda. Run goods for 20 minutes and sample. If a good white is obtained, drop bath and give the hose a warm rinse at 150 degrees F. for five minutes in order to wash out all bleaching chemicals. After this bath soap well for twenty minutes and rinse thoroughly. Heat water to 100 degrees F. and add the bluing until a good white is obtained. In bluing white runs of pigmented rayon, it is practically impossible to get a good union between the rayon and cotton by using a direct dye, as all the dye will go on the cotton first and the rayon apparently takes up no dye. For this reason in blueing a white run use a silk blue and the cotton and rayon will be stained alike. Very good unions on white runs may be obtained by this method.

# Methods of Cleaning and Lubricating Full-Fashioned Hosiery Machines

By Henry W. Hoffmann

IN THE full-fashioned hosiery industry the care and attention given to the cleaning and oiling of a knitting machine will have a great bearing on the quality of hosiery produced and, therefore, if one wishes to make the best hosiery possible, as well as increase the life of a knitting machine, a proper system and method should be installed.

Merely cleaning the machine "in any old way" and using "any old oil" is false economy and never did and never will pay dividends. I have known many cases where breakdowns and bad work could have been avoided if the machinery had been given the proper attention in cleaning and the proper oils had been used. Cheap oils do more harm than good and sometimes an oil is used that is expensive but it is not the proper oil to use in the lubricating of a knitting machine.

I think all full-fashioned hosiery manufacturers will agree that to obtain the best results in full-fashioned hosiery manufacturing the proper cleaning and oiling of machines is very necessary and in writing this article I will endeavor to give the readers the results of my experiences.

## Prefers Special Cleaners

In the cleaning of machines, I have found that the most efficient method of cleaning is to have the cleaning done by men trained for the work rather than have the knitters do this work. With the hosiery industry on a code regulating hours and wages the cost of cleaning by men other than the knitters is reduced because the cleaning can now be done while the machinery is idle and the increase in production received by allowing the knitters to operate the machines the full number of hours, offsets some of the cost of paying wages for cleaners.

In the cleaning of machines, I think the first question is, what is the most suitable to use, rags or waste. Personally, I have always found that rags of the underwear knit type are the best to use for cleaning. These rags can be washed and used over again and usually clean better than waste. In using waste, I find that there is always a danger of lint and loose ends catching and many times these loose ends will catch in some important working part of the machine, later causing damage.

How often should a knitting machine be cleaned? I feel that a thorough cleaning should be given each machine every three or four weeks. Such parts as sinker heads, catch bars, narrowing fingers and picot bars should be cleaned once a week.

How many men should be employed for cleaning? Of course, this depends entirely on the size of a plant, but enough men should be employed so that all the machines can be cleaned every three or four weeks.

### Getting the Best Cleaning Results

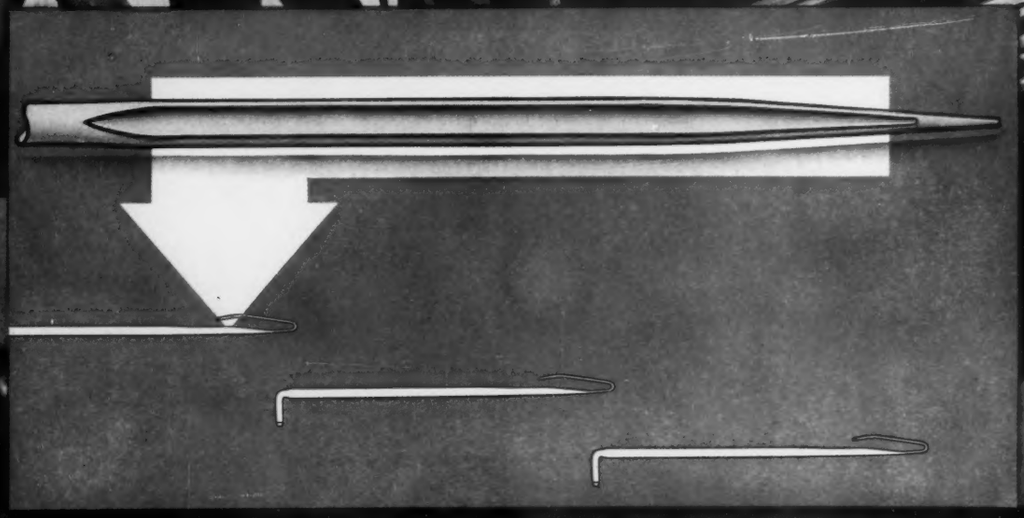
What is the best method to use in getting the machines cleaned properly? After trying various methods of team work with a cleaning crew I found that the best results were obtained when I used only two men for each machine and let each man clean one-half of the machine. I teamed up the men that I felt would work together, as human nature enters into this work as in everything else and the more men doing the work together the greater the friction. This is especially true in smaller plants where it does not pay to employ a foreman to supervise the work. The men I employ for this work are elderly men whose chances of obtaining better positions are slim and usually these men are conscientious and reliable.

How long does it take two men to clean one knitting machine? I find that two men can do a very thorough and satisfactory cleaning in from one and one-half to two hours.

The last question is, how are these men trained and what parts must they clean? Let us say that a hosiery manufacturer operating a small mill formerly had the knitters clean the machines but now wishes to employ a separate cleaning crew for this work. This cleaning crew naturally knows nothing about a knitting machine and therefore must be trained. The best way I know to train an inexperienced man is to let him stay at a knitting machine for a few days with a knitter who would explain to him the various parts of a machine that must be cleaned. After he has seen and learned how a knitting machine operates, have the knitting foreman stop one of the machines for a period of time and let the man or men start to clean under the foreman's supervision. If the foreman could not devote the time to do this, then it would be well to pay a knitter to do the instructing. After the foreman is satisfied that the cleaning can be done without supervision, the hours for cleaning and the system of what machines are to be cleaned each day or night can be regulated according to the way the mill is operated, based on hours, etc.

### A Schedule for Cleaning Parts of Machine

In the training of a cleaning crew, they should be taught to clean the following parts: Clean all cams, cam rollers and shafts. In cleaning cam rollers, they should remove all loose threads that have accumulated because if these threads work their way in between the roller, it causes the rollers to stick and not revolve, which means that stuck rollers will eventually wear down the cam. Clean all carrier rods, needle bars, snappers, thread guide rods and wires,



MACHINE-MADE MEANS

# Centrally Located Grooves

Machine precision has never been more strikingly demonstrated than in the making of Torrington needles. Consider, for example, the amazing degree of precision that is applied to machining the groove of a Torrington needle.

Because the groove must be in the exact center—to prevent the breaking of the beard or throwing the beard out of alignment in the knitting operation (especially in narrowing and transferring), Torringtons are grooved by machines to insure unvarying accuracy.

Torrington needles are machine-made from beard to butt. Every detail in their production is controlled by machines that operate with steady mathematical accuracy.

**OUR PHILADELPHIA RENEEDLING PLANT**

1 Every job handled by experts with special modern equipment.

2 Each job kept intact on an individual truck throughout the process.

3 Bars are washed in a special fluid; scrubbed with revolving brushes.

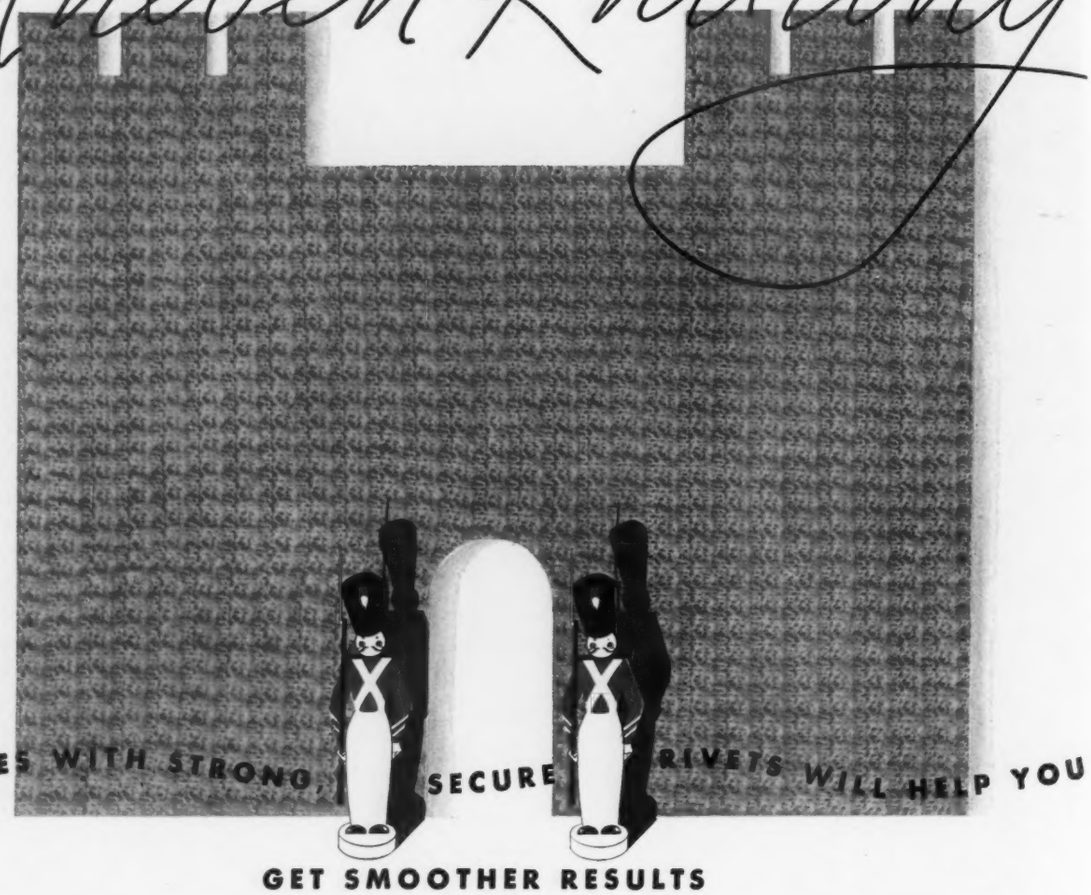
4 Bars are straightened with a special device; brasses resurfaced; slots checked mechanically.

5 Bars filled with Torrington needles; straightened and gauged three ways; spaced also—by gauge.

6 Beards raised uniformly; checked by gauge for height and central setting.

**TORRINGTON** Spring Beard **NEEDLES**

# GUARD AGAINST *Uneven Knitting*




## GET SMOOTHER RESULTS

One way to correct uneven knitting is to make sure of your needles. Make sure they are right *in every detail!* The rivet, for instance, is a tremendous trifle in your latch needle. It can cause damage or it can help to insure the quality of your fabrics—according to its strength and the security with which it is held in place.

Look closely at a Torrington Needle. Note that the rivet is invisible, virtually being *one piece* with the needle itself. Made of finely tempered steel, delicately balanced in the latch to secure free opening and closing, it is set solidly to withstand constant strain and keep going day after day.

Torrington needles are made by machines. Machines insure uniform accuracy in every item—temper, finish, dimension, uniformity. They are built to meet the most exacting demands of modern high speed production.

*The Torrington Company*
ESTABLISHED 1866
*Torrington, Conn., U.S.A.*

BRANCHES:

| | | |
|---|---|---|
| THE TORRINGTON COMPANY, | 1640 FAIRMOUNT AVE., | PHILADELPHIA |
| THE TORRINGTON CO., INC., | 500 FIFTH AVE. | NEW YORK, N. Y. |
| THE TORRINGTON COMPANY, | 936 SOUTH WELLS ST., | CHICAGO, ILLINOIS |
| THE TORRINGTON COMPANY | UNITED BANK BLDG. | GREENSBORO, N. C. |
| THE S. H. SUPPLIES CO. | 210 SOUTH STREET | BOSTON, MASS. |
| LOS FABRICANTES UNIDOS, | 904 CALLE BELGRANO, | BUENOS AIRES |

FACTORIES AT:

TORRINGTON, CONN. — UPPER BEDFORD, QUEBEC
COVENTRY, ENGLAND — AACHEN, GERMANY

TORRINGTON NEEDLES
*Latch*

frames and levers.

In cleaning the thread wires and snappers, the cleaners should be taught to be very careful not to tangle the thread or disturb the tension of the snapper springs. The slur cock box bar should be cleaned very thoroughly as sometimes needle beards or other hard matter gets under a slur cock box causing a bind, which sometimes results in a coulier motion smash. Rust should be removed from all parts and the best method I know for removing rust is to rub the rust spots with a solution of one-half ammonia and one-half water. After rubbing these parts with this solution wipe them thoroughly and then go over these parts with an oily rag to give these parts a film of oil. Any good rust preventing oil can be used for this purpose. If all the rust cannot be removed with an ammonia solution, rub the parts with fine emery cloth. Never use heavy emery cloth as this scratches the surface of the metal and will only start to rust that much quicker.

I do not approve of the cleaning crew cleaning such parts as sinker heads, catchbars, narrowing rods and points or picot bars. Due to the fact that the cleaning crew is not skilled in the art of knitting, they do not realize how easy it is to do damage to these parts and therefore I always have the knitter clean these parts, making them do this once a week.

The friction box rods are not cleaned by the cleaning crew as these rods should be wiped only when the friction boxes are not working properly.

There are two important parts of a knitting machine that I feel are neglected in cleaning and they are sinker head slots and all drive chains. In manufacturing gum silk hosiery, gum and dirt accumulate in the sinker head slots. If this is not removed periodically, it will wear the groove or slots and eventually produce poor fabric. At least three times a year, a solution of benzene and oil should be placed into the sinker heads to remove this dirt. The method to use for doing this is to throw out all needle bars, place a folded piece of paper over the needles, so that the dirt does not strike and stick to the needles. It saves needle breakage when making a piece of fabric to remove all the loose particles of dirt that came out of the sinker slots and grooves. After putting the solution into the sinker heads, run the machines for about ten minutes or until it appears that all the dirt has been removed. I know some manufacturers use kerosene oil instead of benzene for removing dirt from sinker heads but I find that benzene removes the dirt much better. Kerosene also has a tendency to corrode and one must be very careful to see that the sinker heads are well oiled after the dirt has been removed, otherwise corrosion might set in on the sinkers and dividers. In fact, whether one uses benzene or kerosene be sure to oil the sinkers and dividers thoroughly, after the sinker head slots have been cleaned.

In the matter of cleaning drive chains, many times a chain is ruined because it never was taken off the machine and cleaned. Oiling a chain at frequent intervals, while necessary, does not mean that this is all that should be done to the chain. Dirt accumulates into these chains and they must be cleaned at least once every six months, if one expects to get maximum life out of the chains.

In cleaning these chains I have always followed out the instructions given by the manufacturer of chains, which is as follows: Immerse the chains in a bath of turpentine to loosen all dirt. Then scrub them with a brush to remove all dirt. Drain off all the turpentine and then place them in a bath of heated oil. This oil should be a heavy body oil and I have used a heavy motor oil for such a bath. Leave the chains in this bath for an hour or more to be sure that the oil gets into all working parts.

One of the reasons why chains are neglected is because of the time it takes for cleaning them and causing the machine to be idle. However, with so-called code hours this work can now be done while the machinery is stopped, so that no loss of time will occur.

The moistening troughs on a knitting machine should also be cleaned at least every three months because clean water in these troughs mean better moistening of silk, thereby making better fabric.

The cleaning of floor pans under the machines should be done weekly and with a cleaning crew doing the cleaning of knitting machines, instead of the knitter; this presents a problem, as to who should clean the floor pans. One of our reasons for having a cleaning crew do the cleaning is to increase the production and if the knitters cleaned the floor pans each week it would mean that much time lost. We, therefore, have the cleaning crew clean these pans, instead of the knitters. Our mill stops work at midnight each night and the cleaning crew works from midnight to six in the morning. After the knitting machines shut down Friday nights for the week end, we have the cleaning crew clean the floor pans of all the machines instead of cleaning machines that night. This works out very satisfactory and gives the mill a clean appearance over the week-end.

In the cleaning of machines with a cleaning crew doing the work, each mill must naturally solve their own problems. However, I am sure that with a cleaning crew a more satisfactory cleaning is obtained and the results obtained more than offset the cost.

## Lubricating the Machine

Proper lubrication of a full-fashioned knitting machine is also very necessary if one wishes to secure greater production, better fabric, increase the life of a machine, and reduce operating costs. Relying on the knitter to do the oiling of machines has, in my opinion, always been false economy, because of the fact that several kinds of oil and grease must be used and the average knitter would have one oil can, which meant that the wrong oil is being used on certain parts of the machine.

A trained expert held entirely responsible for the oiling of knitting machines is a good investment because at all times the machinery is properly lubricated, which means less breakdowns and loss of production due to no oil or the wrong kind of oil being used.

Keeping a knitting machine well lubricated is not a hard problem and when done by one man only, many economies are effected. First, the knitter is

Garments made of Dixie durene have just the right amount of elasticity. They fit the body with a pleasing snugness that assures comfort and beauty. They keep their appearance of newness through many launderings, and they last longer. You knit complete wearer-satisfaction into your merchandise when you use Dixie durene—a modern yarn whose quality is dependable because it is kept under Dixie's strict control at every step of its manufacture, from raw cotton to shipment to you.

**DIXIE MERCERIZING COMPANY**

CHATTANOOGA • TENNESSEE

DIXIE DURENE .. A PRODUCT OF CONTROLLED MANUFACTURE

producing stockings instead of stopping the machine for oiling. Second, with one man doing the oiling, there is less waste of oil as he will be more careful with the oil and not allow half the oil to dry on the floor pans. Third, many breakdowns are caused by knitters forgetting to oil certain parts and these are prevented when one man is responsible for the proper lubricating of machinery.

### Kinds of Oil to Use

For the proper lubrication of knitting machines the following oils must be used. A high-grade needle oil for needles and points. A light machine oil for sinkers, bearings, cam rollers, carrier and narrowing rods, and narrowing spindles. A heavy machine oil for gears, slurcock bars and chains. Cup grease for all grease cups. Motor oil for motors as recommended by the electric motor manufacturers.

In training a man to do the oiling and greasing of knitting machines, he should be taught to learn where all oil holes are and what kind of oil is used for each part. He should be taught the importance of keeping the motors, disc clutches and coulier motion parts well lubricated, as these are the parts that cause many breakdowns.

The knitter should do the oiling of needles, narrowing points and picot points, and should also oil the sinker heads.

For the proper lubrication of a knitting machine a regular schedule of oiling should be used, and the man trained to do the oiling should follow this schedule as closely as possible.

In the oiling of a knitting machine, the needles, narrowing points and picot points need more attention than any other part of a knitting machine. For this oiling a good grade of oil must be used. This oil should be such quality that it is stainless and can easily be removed when hosiery is boiled off and dyed. It should be a free flowing oil that will not dry up easily and gum on the needles; otherwise many menders will occur, especially in the picot operation.

For several years I have used a form of white petroleum instead of needle oil for needles and points and have had far more satisfactory results, especially when starting up on Monday after a week end shutdown. When applying oil to needles and points, use a small soft brush and only apply thin coat of oil to the needles. The oiling of needles and points should be done daily by the knitter before he leaves the plant.

The sinker heads should be oiled by the knitter once a week, using a light machine oil for this purpose. One of the things a knitter should do each morning before starting a knitting machine is to slide the friction boxes back and forth to loosen the boxes. If they appear tight apply a very small quantity of castor oil to the friction box rod. These are the only parts a knitter should oil if a trained man is employed to do the oiling.

The schedule for oiling by a trained man should be as follows: All bearings, cam rollers and narrowing spindles should be oiled twice a week, using a light machine oil for these parts. The narrowing and carrier rods should also be oiled twice a week with light machine oil but it is better to apply this oil with a brush rather than with an oil can because brushing these rods not only lubricates them but also prevents the formation of rust.

The drive chains should be oiled twice a week but use a heavy machine oil for oiling chains. The slurcock bar should be oiled twice a week, using a heavy machine oil. All gears, the coulier motion, all grease cups, the disc clutch, and motor should be oiled every two weeks. Use heavy machine oil and cup grease for these parts and a motor oil adapted for motors for the motor.

About every three months the oil in the coulier pan should be removed and the pan cleaned and new oil placed into the pan.

The jack head of a knitting machine is also a part that needs lubrication and while many manufacturers use oil for these heads, I have found that better results are obtained if an Alemite grease is used instead of oil.

This grease not only prevents the jacks from flying back, resulting in so-called sinker lines in the hosiery but also lubricates the jacks. Care should be taken not to put on too much of this grease and the best way to apply the grease is by using a brush and brushing the grease into the jacks in the jack heads. One greasing each month is all that is necessary to keep the jack heads properly lubricated.

No doubt some manufacturers hesitate to employ a cleaning crew and oiler, thinking that this is unnecessary overhead. If anyone will go into this matter thoroughly, they will find that the labor cost per machine per month is not over five or six dollars, depending upon wages paid in their locality. In return for such an investment one receives at least five dozen more production per machine per month because the knitters do not have the machine stopped for cleaning and oiling. Additional production is made through less loss of time caused by breakdowns. Repair costs are less and in the matter of oiling, the oil is not wasted. When one figures out all these items plus the fact that a machine will last much longer, it will show that wages paid for cleaning and oiling is a good investment and one that should be adopted by every mill of any fair size.

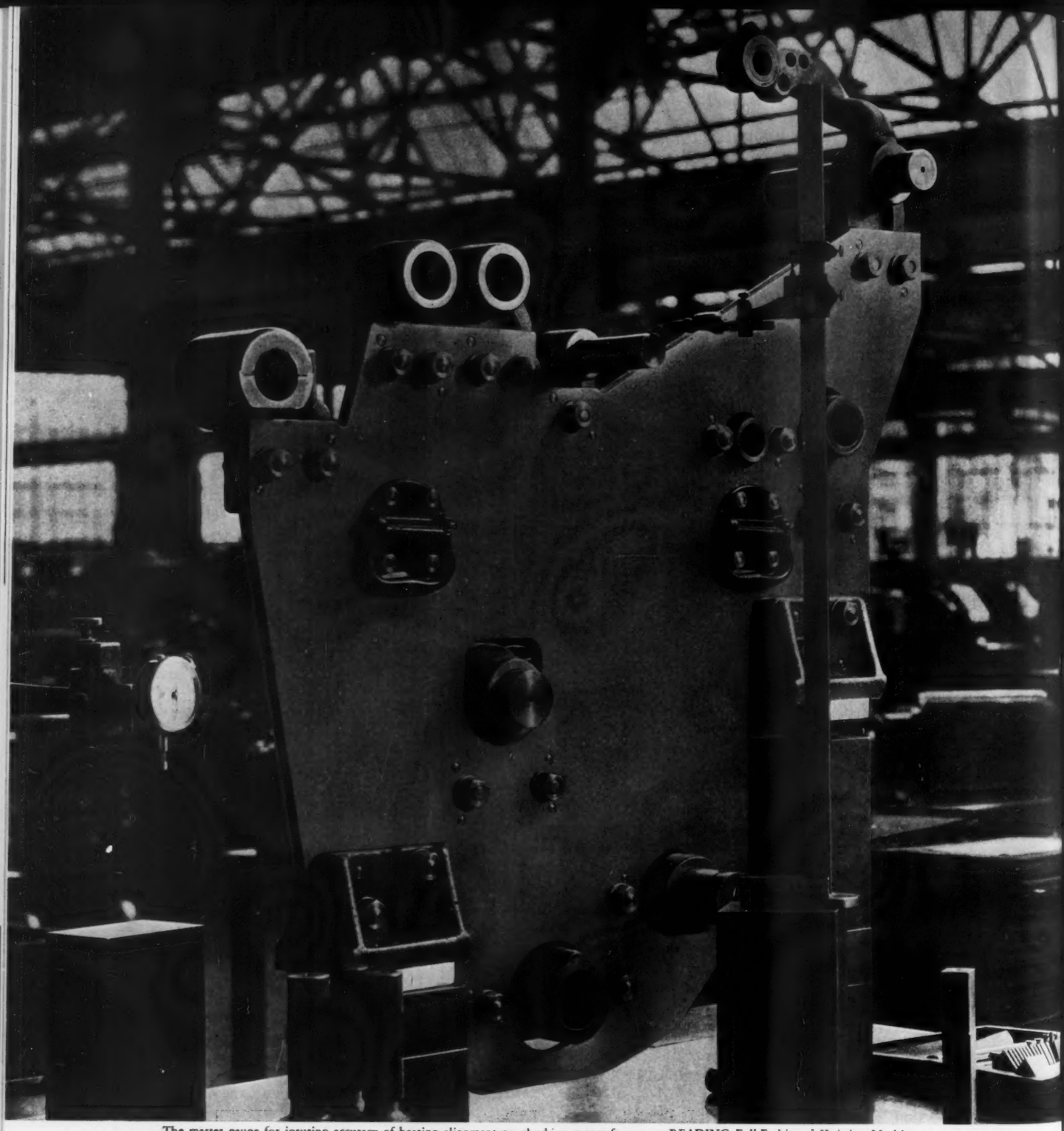
A full-fashioned hosiery machine is an expensive machine and therefore should be cleaned and oiled properly and every manufacturer should insist that cleaning and oiling is done properly and as per schedule at all times and the result will be better hosiery, lower operating costs and greater earnings.

## Eliminating "Washboard Effects" in the Manufacture of "Ringless" Hosiery

The demand for additional copies of a previous article by Mr. Hoffmann on the above subject, that appeared in the December 1934 issue of COTTON, was so great that rota-print reproductions were made, and copies of the article in this form may be secured upon request at a nominal charge.

Mills interested in seeing this article, or in securing additional copies in rota-print, which reproduces the text and illustrations as they appeared in the magazine, should place requests promptly . .

* * *



The master gauge for insuring accuracy of bearing alignment on checking center frames on READING Full-Fashioned Knitting Machines.

**In a 40-hour week the new READING high-production twenty-four section forty-five gauge full-fashioned knitting machine produces nearly sixty per cent more volume and more than seventy-five per cent more value than the ordinary eighteen-section thirty-nine gauge machine.**

**TEXTILE MACHINE WORKS • READING, PA.**

# Some Thoughts on Managing a Seamless Mill

## By Albert T. Russell

WE HAVE always had problems in the seamless hosiery business. We will continue to have them, always. The one big problem is of course making money. My comments or criticisms are not to be taken as coming from a mill manager, but rather from a common everyday executive who has been fighting problems in one department and at the same time making notes of what the mill as a whole has been doing along this line.

During the past few years many of our pet ideas about seamless manufacturing have not only gone to the dry cleaner's, as it were, and come back looking better but still unsatisfactory—no, they have been thoroughly washed, rinsed and hung out to dry, and in the muddy waters left over we have had to look for a solution to our problems.

Many perplexing problems come from within the mill, and are often caused by poor judgment of executives or employees. Facts must be gotten, some definite action decided upon and put into effect immediately. A wrong move is far better than no move at all. Mistakes today may show the way to profits tomorrow. Here is an example: A worker will make a suggestion to an executive. He is told that's a darn good idea; we will try it sometime—and that ends the matter. After several attempts the worker decides that his ideas are not needed nor appreciated. He becomes a machine, working with his hands, and his head merely becomes a knot to keep his spine from unraveling. The same thing happens between department heads and the management. A good department head becomes a "yes man", a liability instead of an asset.

The codes have brought problems, to be sure, they have hindered rather than helped both employer and employees in many instances. Many workers are walking the streets and applying for relief (if any) simply because they cannot produce a given amount of work in a certain time because of some handicap which they cannot overcome. The mill would be glad to give them work and pay prevailing rates for what they could accomplish, which would give them bread and keep them off the streets. But code provisions make that impossible. It would be suicide for the mill to base its rates on the accomplishment of a handicapped worker, yet his work could be profitable to himself and to the mill.

On the other hand, some mills spend much time trying to find ways and means of beating rather than meeting the codes. Sad, but true—there are other elements from without which are constantly sowing seeds of unrest, causing the worker to distrust his employer, and the inevitable results are serious problems for everyone.

Now, let us consider the various departments in the mill, dividing them into three factors, namely, buying, manufacturing and selling. Let us assume that the mill is adequately equipped with suitable buildings, modern machinery and well trained help.

*Buying.* The first thing needed is raw material, yarn, machinery repairs, dyestuff, fuel, light, power and other mill supplies. Larger mills employ a purchasing agent or buyer, whose duty is to contact sources of supply for whatever the mill may need; in smaller mills the owner and superintendent do the buying. Profitable buying calls for close cooperation between the buyer and the department heads throughout the mill. The man who uses the material should have something to say about buying it, where it comes from is one thing, how good it is quite another. Surely the mill's chief engineer, master mechanic or fireman should know what kind of

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

*Put yourself in this picture.*

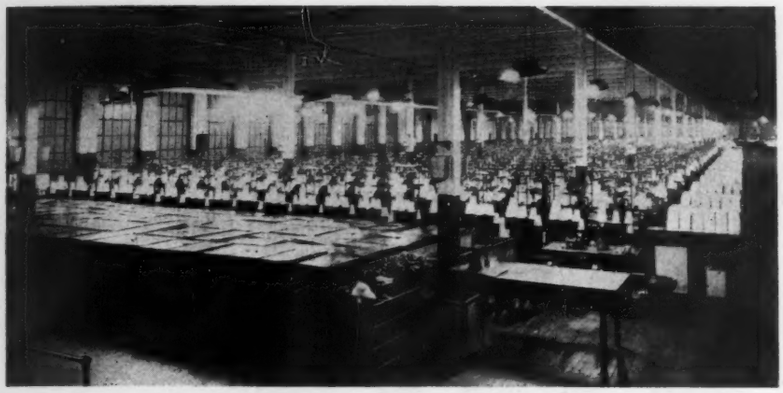
The success of any business, (and yours is no exception), depends on what the consumer does about it. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality full-fashioned stockings are standardized on Royersford Needles is a tribute to customer satisfaction.

*The prescription for better knitting*

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. • Louis Hirsch Textile Machines, Inc., Special Representatives

# ROYERSFORD NEEDLES



The author says the knitting department should be well laid out, neatly kept, and well lighted. "In order to knit quality goods the knitting machinery must be kept in first-class condition" . . . . . .

Photo, Courtesy General Electric Vapor Lamp Co. . . . . .

coal will give best results in the mill's furnace; the freight on cheap coal and good coal is identical.

Numerous sources of supply for yarns are available. Buying a certain count from one source will show a saving of two cents per pound, yet by actual tests in the knitting department, a slightly higher priced yarn from another source will show a saving on every dozen due to less seconds, thirds and waste. Silks, rayons, ply yarns, and combed or carded singles come under the same category. There is a source of supply to suit the individual requirements of any mill, and it is up to the buyer to find it and in doing so, he must be governed by initial cost and ultimate results. It is only natural for the buyer to have friends among the salesmen; very often they make it difficult for him to say No, but that's part of his job, whether he likes it or not. New or improved products are constantly appearing on the market. The progressive mill must do some experimentation, but why make an experimental laboratory out of the whole mill? Constantly changing the source of supply costs money, shopping around will get the mill nowhere fast; it is far safer to find a good source of supply and *stick to it.*

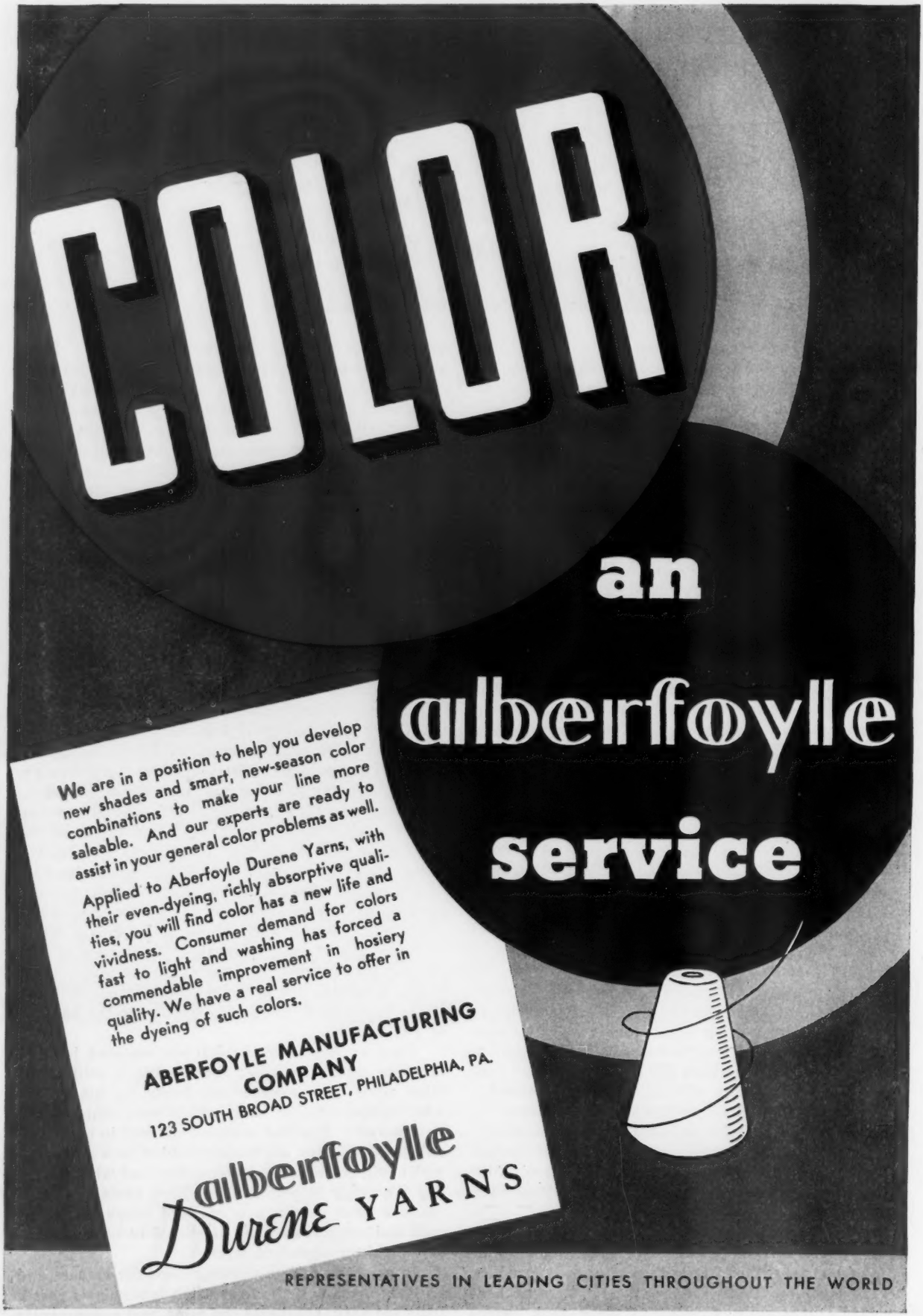
*Manufacturing.* Actual manufacturing is done mainly in three departments: ribbing (if ribbed goods are made); knitting and looping. All other operations following these three are equally important, and I will attempt to include each department in my remarks in their respective order. As previously stated, the codes have worked some hardships on the mill and on individuals in it, yet in many instances the codes have been a blessing in disguise. We are now getting eight hour results in eight hours, where we were getting eight hour results in nine, nine and one-half or ten hours. We have learned to watch costs, to cut corners and in short we have been forced to become more efficient. Every operator has come to realize that his or her value to the mill and the security of each job is based solely on individual merit. The go-getter makes more money, the average operator gets a fair share; being a good friend of the boss or a relative means little. Accomplishment is what counts.

More than ever the head of a department must be a keen observer and possess a thorough understanding of human nature. Every operator must produce, every machine must produce, the department head must be constantly striving to place each person where he or she can accomplish the most. Poor judgment in buying yarns, for instance, will not only give trouble in the knitting departments, but right on through the mill. It would be ignorance to put high priced yarn in a cheap number, the cost of the yarns must be commensurate with the selling price, but if the operator falls down in production on account of inferior yarns, the mill pays out money, the operator loses, and the mill loses. That's what shopping for yarns can mean to a seamless mill. I have merely scratched the surface, but you boss knitters know what I am trying to say. Worthwhile customers of today demand quality merchandise and they want it shipped on time. Justifiable complaints about quality must be thrashed out in the respective departments, knitting, dyeing, boarding and finishing bear the brunt of such complaints, with knitting ranking first.

In order to knit quality goods the mill's knitting machinery must be kept in first class condition. Shabbily knit goods cannot be improved by dyeing, boarding or fancy packing. True, machine parts are expensive, but any machine part actually worn out by *use* will more than pay for itself. Accidents and abuse (with a heavy accent on the latter) are the chief causes in running up parts costs. My rather blunt reference to parts may be misunderstood. I do not believe that a machine fixer will intentionally destroy useful machine parts, but rough handling of machines, lack of proper lubrication, careless fitting and grinding of machine parts, leaving new or useful machine parts lie around on machines, work benches, in tool kits or on the floor where they are likely to get lost—all these come under the heading of parts abuse.

Then we have parts which are replaced because of some certain trouble; the trouble is still there, other parts are renewed and finally we hit it, but what happens to the parts which were unnecessarily removed? Are they replaced or used in other machines? No, they are usually added to a collection which will come in handy some day, and what a busy day it's going to be. And we have parts abuse because a fixer uses a pair of Ford pliers to tighten nuts and cap screws when he should be using a socket wrench or open end wrench.

In grinding and re-working cams for ribbers and knitting machines, the fixer often bears down just a little too hard. overheats the cams, and consequently


COLOR
an
aberfoyle
service
We are in a position to help you develop new shades and smart, new-season color combinations to make your line more saleable. And our experts are ready to assist in your general color problems as well.
Applied to Aberfoyle Durene Yarns, with their even-dyeing, richly absorptive qualities, you will find color has a new life and vividness. Consumer demand for colors fast to light and washing has forced a commendable improvement in hosiery quality. We have a real service to offer in the dyeing of such colors.
ABERFOYLE MANUFACTURING COMPANY
123 SOUTH BROAD STREET, PHILADELPHIA, PA.
aberfoyle
Durene YARNS
REPRESENTATIVES IN LEADING CITIES THROUGHOUT THE WORLD

draws out the temper. Yes, we have parts abuse in the knitting departments usually caused not by ignorance but rather by carelessness.

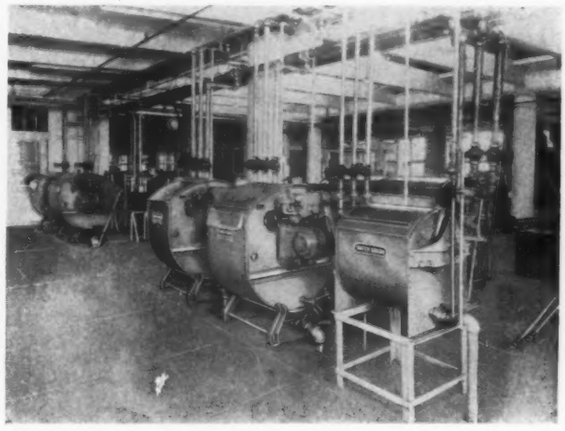
*Gray inspection and mending.* There are no difficult problems in the gray inspection department, yet laxity in this department will bring plenty of trouble. A competent person in charge and a force of inspections who can really find imperfects is what it takes. Daily re-inspections should be made by all means, seconds not found by the gray inspector are likely to be thirds when they reach the finishing room inspector. Goods must not be permitted to pile up in the inspection department or the knitting departments are likely to get into a rut.

Gray inspection reports should reach the knitting departments promptly, and unusually bad bundles or work should be reported to the knitting room foreman immediately. The mill's reputation and chances to make a profit hang on quality. Gray mending is usually done in the inspection department. It has become an art instead of simply sewing up holes; fabric must be built up, runs latched, etc. Various kinds of mending needles or hooks simplify this work; a keen eye and a steady hand are two things a gray mender must possess. Showing a gray mender how the knitting machine makes fabric will help her get the hang of latching runs. An expert hand mender can save the mill many a dollar; it costs money to train them, but it is a mighty good investment. Good menders have no difficulty in finding a job.

*Grey stock.* The opinion of a half dozen men in charge of this department in mills manufacturing a variety of goods should be worth something. Their consensus of opinion, right or wrong, is: Too many styles and too many small orders. The customer of course wants his merchandise, yet in many cases the kind of orders he sends in spell troubles for the grey stock man. Small orders covering a complete range of sizes and colors are a thorn in the flesh for the grey stock department and all others for that matter. The only way the grey stock man can help himself at all is to combine orders wherever possible and thus create volume. Close co-operation between the grey stock and knitting departments is mighty important and will help a great deal toward reducing grey stock problems. The actual trouble in most grey stock departments is not getting up orders but rather in getting the necessary goods with which to get them up. Thus the grey stock problems revert back to the knitting departments; whatever hurts one hurts both. Continuous changing of styles back and forth to get out small orders slows up production and therefore increases manufacturing costs. And so we leave the grey stock man praying for fewer styles and more volume.

*Dyeing.* Dyestuff manufacturers have taken quite a burden off of the dyer's shoulders during the past few years. Their representatives will gladly help the dyer with many of his problems and demonstrate at the mill how to use their respective products. Back in the good old days the dyer had to make his stuff; now it can be bought like canned goods for the pantry shelf. But the dyer still has his problems, for there are shades and shades and very often he finds himself in the shade trying to get the proper tone, cast, or what-have-you. There are so many different shades in every color that it would not be surprising if a customer were to ask for three shades of black so he could satisfy individual tastes for hose to be worn at funerals, and three shades of white to properly fill the need of a June bride according to her individual state of bliss. All the dyer needs to end a perfect day is to have goods come through in which silk, rayon and cotton from various sources of supply have been mixed in a batch of goods. Right you are—the knitting department should never mix yarns, *but* the knitting department doesn't *buy* yarn; they simply *use* it.

No, I'm not making mountains out of molehills; merely stating facts, ask the dyer. Nowhere in the whole mill is machinery subjected to more abuse than in the dyehouse. Not necessarily by neglect or carelessness, but rather by the very nature of the work to be done. Rust and corrosion—the arch enemies of dyehouse machinery—are constantly on the job. Scraping scale and re-painting exposed parts will help a lot. Correct lubrication for dyehouse machinery is very important; the chemical reaction in the dyehouse is very hard on lubricants. Pipe fittings need attention, valves need re-seating or some of the profits will drip into the sewer. Small batches, too many shades and colors and too many different types of goods keep the dyer on the jump. Some batches are so small that one would think a lot of bags were being dyed instead of a batch of goods, even if the whole order were put into one fair-sized tub. Yes, the dyer has problems.



Courtesy, Smith, Drum Co.

The dyehouse must watch for rust and corrosion, chemical reactions, proper lubrication, etc. . .

*Finishing department.* Here are gathered together all the hard work of all departments and their mistakes. The finisher, like all others, must have volume, or he's sunk. Grey stock, dyehouse and boarding departments must work *with* the finisher, or results will be nil. Inspectors, mating, stamping, labeling and packing will all be thrown into reverse gear if goods come through in dabs. The finisher must have a complete order to enable him to ship goods. Putting goods through is no problem for the finisher; getting goods is what worries him. Once again we come to size and color assortments covering entirely too much

# DOES THE WORK OF FOUR MACHINES!

## Banner Wrap Stripe Attachment

applied to

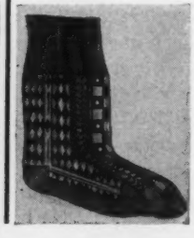
## Banner 12 Step Machines, Knits:

**1 PLAIN HOSE** with or without tipped heels and toes. Horizontal stripe, if desired.

**2 BANNER 12 STEP** employing the famous Banner "sinker method" of reverse plating, assuring perfect coverage.

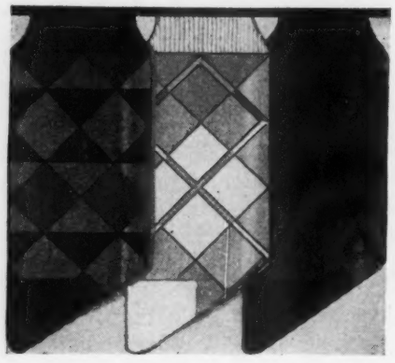
**3 BANNER WRAP** knits genuine Banner wrap stripe including authentic plaid effects.

**4 BANNER WRAP AND 12 STEP COMBINATION**



ALL ON THE ONE MACHINE!

BANNER 12 Step "sinker method" reverse plating machines are now equipped (optional) with genuine Banner wrap stripe, thereby providing an almost unlimited range of patterns for knitting highest grade of fancies in half-hose and ankle-lengths. Genuine Banner Wrap Stripe Attachments are also available for application to Banner 12 Step machines now in operation with 6 steps and 12 colors for low cylinder, and 8 steps and 12 colors for high cylinder models.



## 24 STEP Sinker REVERSE PLATING

Together with Banner Jacquard, these are the only machines capable of knitting fashion's most pressing demand, Argyle plaids and large figures, by the "sinker method" which assures perfect coverage, even when plating light colors over dark and using usually difficult yarn combinations.

See these and other exclusive Banner features at the Knitting Arts Exhibition, Philadelphia, April 22 to 26.' Tickets for buyers on request.

## BANNER SPLIT FOOT

Knits leg and instep from single cone of yarn. Instep joined to sole with no trace of fringe or ragged edge. Permits knitting "White foot" hosiery or wool feet with silk or mercerized legs. Produces the highest grade of staple hosiery.

## HEMPHILL COMPANY

PAWTUCKET, R. I.

NEW YORK
93 Worth St.

CHATTANOOGA
James Building

PHILADELPHIA
6822 No. Gratz St.

HIGH POINT
Commercial Bank Bldg.

**NEEDLES, SINKERS, JACKS, AND PATTERN SUPPLIES AVAILABLE AT PAWTUCKET, CHATTANOOGA AND HIGH POINT.**

territory and small orders. Too many varieties of packing, stamping and labeling, not to mention special packing for select customers who are constantly promising large orders, but their promises do not materialize. Much more could be said, but let it suffice to say, if my statements seem a bit exaggerated, spend a day in the finishing room when a customary rush is on, and see for yourself.

*Selling.* We have passed through turbulent waters in the mill proper, and we arrive hopeful but somewhat winded at the selling end. Is everything calm and bright? Not by a long shot. Our troubles just begin. It is up to the sales department to keep the mill busy, and that's a man-sized job. Coming in or going out of a depression merely adds more grist to the mill. The sales department either sells what the mill can make or the mill *tries* to make what the sales department can sell.

A carefully laid out production program based entirely on what the mill can actually produce is essential. It is not only difficult but next to impossible to anticipate just what will sell and what will not. The ultimate consumer does not ask for certain kinds of merchandise; he buys what he is shown, or he doesn't. All of our problems in regard to styles and trends in the hosiery business are man-made. Someone pushes a number and creates volume and we either get in line and do likewise or we drag along behind and take what we can get. Doubling production overnight is a thing of the past; the codes put a clamp on that. You can't grab machines out of thin air and you don't find trained operators standing in line in your employment office waiting to go to work, even in these so-called depressed times. Nothing is more harmful to the mill and sales department than falling down on deliveries. Repeat orders will not come in if goods fail to go out on time. If the mill cannot fill orders on time they should tell the sales department frankly just what can be expected. The customer placed his order in good faith—the mill accepted it—he wants his goods, and you can't blame him. The mill on the other hand is not always to blame for slow deliveries. The sales department takes the orders and sends them to the mill. Do they make promises to the customer which the mill cannot fulfill in order to get business, or do they tell the customer frankly just what he can expect?

Many mills lose money because they are afraid to spend money. It is not always necessary to buy new machinery; new devices and attachments can be bought which will enable the mill to make use of old machines. The mill of today must have modern up-to-date equipment. It is impossible to make 1935 merchandise on machines which were old ten years ago. Every mill is faced with the problem of making some numbers on which the profits are small; it is up to the sales department to guard against over-selling such numbers. Prices of raw material change so fast that it is difficult for the mill to anticipate its costs on every number for the complete season. There must be a safety margin or the mill will suffer losses. A carefully planned production program will go a long way not only toward solving problems, but rather toward preventing problems.

## Handling Short Lengths in Full-Fashioned

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 6344" in December COTTON is interested in learning how other manufacturers handle the problem of short lengths in hosiery after the stockings are boarded and no doubt the contributor will be interested in how we solved this problem.

For many years we would take our short lengths and re-board them a half size smaller than what the size should be. In other words, we would take a size 9½ short length and board them on a size 9 board. We found, however, in checking up the cost of reboarding and the few stockings that we saved as first quality, that this did not pay us for the trouble, especially when hosiery prices kept going lower and lower.

It so happened that we had a dry box in our boarding department that had not been in use for some time and we then tried out re-boarding them on a wooden form and this form was about ¼ inch narrower than our regular form.

By this method we were able to save about 80 per cent of our short lengths from going into seconds. However, we did have numerous complaints from customers about our lengths and in some cases when the hosiery was returned because the customer complained about the hosiery being too short, we usually found that they were originally short lengths boarded on narrow forms.

We therefore stopped this method of trying to make first quality out of short lengths because instead of fooling the customer, we were only fooling ourselves.

About a year ago we learned of an oil that could be used that would lengthen the stockings in the boarding without unnecessary pulling down on the boards. The stockings are immersed in from a two to five per cent solution of this oil and the principal feature of this oil is that it increases the elasticity of the stockings so that short lengths immersed in this solution and then boarded will make the length of the stockings from ¾ to 1-inch longer, thereby making short lengths first quality stockings instead of throwing them out as seconds.

For the contributor's benefit, I can say that since using this oil we have had no complaints about short length stockings from our customers and we attribute this to the fact that the elasticity of the stockings is increased and therefore the customer is not being fooled but in reality is receiving a full length stocking.

One of the first questions that came to our minds when this oil was tried out was, would it make the stocking greasy and would this greasiness come off in the boxes? On tests we made, we found that because of the low per cent solution these stockings were immersed into, no greasiness occurred. We also found it did not change the shade and the only thing we find different in the stockings immersed in this oil solution is that it does put a slight shine in the stocking.

The method we use for immersing short length stockings is as follows: We purchased a washing machine with an extractor attachment and we immerse the stockings in the solution in the washing machine and then extract the stockings so that they are dry

*Boger & Crawford*

*cordially invite you*
*to visit their*

*Booths Numbers*
*248, 249, 262*
*and 263*

*at the*

*Knitting Arts*
*Exhibition*

*to be held in the*

*Commercial Museum*
*Philadelphia, Pa.,*

*on*

*April 22 to April 26*
*inclusive*

enough for boarding. By this method we save the solution so that it can be used over and over again and at the same time we take all the short lengths from any one dye lot and immediately re-board them so that the dye lot remains intact.

We have found out by experience that any method used other than increasing the elasticity of the stockings to save short lengths from becoming seconds is only fooling the customer and eventually means a comeback with a possibility of loss of business, so in the matter of trying to make short lengths into first quality hosiery, we should all be sure that we are not penny wise and pound foolish.

CONTRIBUTOR NO. 6349.

## Keeping Hosiery on Size

EDITOR COTTON:

The problem of measuring sizes in a hosiery mill is an all-important one and it seems that the systems used vary between different mills. We should bear in mind that money is lost when hosiery is made in lengths longer than the standard and much trouble is experienced when short lengths appear in the finishing department, and the "fit" is always a point of consideration in quality.

Some of the suggestions to be noted here are applicable to all styles of machines and to all fabrics. It is advisable to measure all fabrics twice on each eight-hour shift. It is most important to use sizing boards with suitable markings for lengths which would be comparable to the lengths desired in the finished product, taking into consideration of course the shrinkage of cotton, wool, and rayon, and the boil-off of silk. The amount of these variations should be established by finishing test dozens with notes made on lengths before and after finishing.

When the lengths of each portion of the sock or stocking are fixed, round-headed brass tacks should be placed on the measuring board to denote the position of the heel gore line, the length of the high splice, single garter and double garter. This applies to Model K ladies' hose and anklets; similar markings can be used on men's half-hose forms for the gore line transfer and over-all length.

Records should be kept of the number of links used in the chain, and these standards should be referred to each time the size is changed. It is customary to change one link in the foot of HH styles for each half size of all work of 150-needle and finer. One link in the foot, two links in the boot is the change usually made for ladies' full length seamless hose for each half size.

Before changing a tension adjustment it is good practice to check to see that yarn is threaded in the usual manner and to note if the yarn is threaded through tensions and that the guides and tensions are not clogged with lint.

The next consideration should be the supply package and yarn delivery. On fine gauges the package should not be greater than 2½ inches in diameter at the top and for rayon and tram silk the cones should be placed in a horizontal position with a ballooning guide about one-inch in front and a little above the center of the end of the package of body yarn. The guide for cotton yarns should be at least 15 inches above the package and the package should always be set in a vertical position.

On styles where some portion of the fabric is plaited yarn, tensions on the facing yarn are required. The best results are usually obtained with the use of tension on unplaited styles also. A disc tension with a porcelain hub and guide, placed as near the yarn changing finger as possible, will serve these requirements almost without exception. The discs in this type of tension should be checked by holding them to the light to note that they contact on all sides of the yarn tensioning surface.

Knitting machine builders have provided tension adjustments for most of the sections of hosiery in which the yarn varies in weight from other sections or where a different length of stitch is required. These adjustments can be supplemented by others where the work is of a special nature. The garter tension is adjusted on Model K machines on the second screw from the left on the tension block with an additional screw for adjusting outside garter which is positioned on the drum. The changing of the tension block screw affects the make-up, inside garter and outside garter. By placing a tension screw the same diameter and ½-inch longer in line with the outside garter screw in the drum and locked on the inside of the drum with a wing nut and placed in position to contact the tension block stud when the machine is at the inside garter position, you are afforded a separate inside garter tension adjustment. By making this change the tension block garter screw can be used as a separate adjustment for the make-up which is particularly desirable for correcting mends. Similar screws locked by wing nuts can be placed in the drum in line with the toe tension drum cam and at such a position as to contact the tension lever block during the advanced toe and run off operations. These can be applied to all types of Scott & Williams equipment in an easy manner and they supply a quick and easy means of separate adjustment for advanced toe and run-off without interfering with the heel and toe adjustments where regularly all are affected by the same tension block screw.

In addition to the regular measuring schedule, the fabric should be measured after any change of adjustment of machine tensions, yarn tensions, sinker adjustments, changing of length of yarn changing finger and any change in the needle stitch cam. A regular schedule of applying oil between the gear ring and the cylinder should be adopted and not more than one week should be allowed to elapse between these applications. In mills with a large and varied output, it is most important that one person be trained to measure sizes and learn the reactions of the many kinds of fibers in the dyeing and finishing. This is particularly true where it is customary to change fixers from one line to another. They do not always master the details of measuring the new styles at once, and lengths can become off-standard most easily during the first weeks of their work on the new line.

What woman can resist the lure of exquisitely sheer, crystal clear silk hosiery . . . or the joy of rich, soft, glowing silk "undies"?

To meet this instinctive love of beautiful finery . . . ***improve the finish*** on your hosiery and underwear! Enrich the appearance—the feel—the texture. Here's how many leading mills do it:

Use ONYX textile compounds in your boiling-off, dyeing, dulling, spotproofing and finishing. Quality will improve and operating costs diminish. Your production will be uniform, with less troubles, with less seconds and throwouts.

ONYX has developed, thru research and mill-testing, specific compounds for each operation, to meet the specialized needs of hosiery and underwear processing.

Write for test samples, naming operation and fabric. Ask for a trained representative to call. Our laboratories will gladly help you overcome any processing and finishing problems.

VISIT OUR BOOTH NO. 358
*at the Knitting Arts Exhibition*

**ONYX OIL & CHEMICAL CO.**
*Specialists on Finishing Materials.*
**Jersey City, N. J.**

Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

**Onyx**
**LABORATORY-CONTROLLED**
**PROCESSING & FINISHING COMPOUNDS**

The person in charge of sizing should be in close touch with the dyehouse, boarding room and finishing department. Changes in the length of time of the boil-off of the pure silk hosiery in the dyehouse should be called to his attention and the use of holders on hosiery forms or dispensing with the use of same also affects the lengths. Careless boarding of course is always a factor to be considered. Daily inspection of the finished styles gives the sizer an idea of the results he is obtaining.

CONTRIBUTOR NO. 6370.

## A Method of Handling Odds Accumulating at Mating Operation on Full Fashioned

**A southern mill executive, in answering a question from a reader, goes into detail in describing the system of handling this problem in his full-fashioned plant . . . . . .**

EDITOR COTTON:

The question submitted by "CONTRIBUTOR NO. 6363" on page 109, March COTTON, as to the best method for handling odds that accumulate at the mating operation in a full-fashioned mill, with reference to the disposition of various classifications of goods in finishing is one that interests most all hosiery manufacturers. It is a problem with so many complications that the best system requires constant supervision to be efficient.

Through a process of development, we have worked out our present system which seems to get good results in our plant, but might not be applicable to another plant with a more diversified line. Our maters do not mate hosiery by the pair. They mate by the stack. With good average knitting, four stacks will accommodate 98 per cent of the batch. Our lengths average 30 inches. The mater starts four stacks, 29½ inches—30 inches—30½ inches—and 31 inches. When the stack is more than a dozen high she counts off 12 pairs. All of the dozen from a given stack are the same length, which makes a uniform package to fold and box.

At the completion of the batch, the odds from the four stacks are combined to make a mixed length dozen more or less. The advantage of this method is the speed effected by the elimination of multiple handling in the old one-pair system. Every stocking that the mater picks up she lays down on its respective stack as a completed operation. This method of mating is not practical unless the goods are knit with a high degree of uniformity in the knitting room. We believe, however, any system of finishing which requires a higher degree of efficiency in the knitting is a good one.

There will necessarily be some long and short high spliced heels and some odd lengths that will not conform to the stack, but these are laid aside as odds and mated at the completion of the lot by the old pair-by-pair method. As stated before, these odds should run less than 2 per cent.

The time saving by this method is considerable; an average of fully 25 per cent, while the finished package is a much neater, more uniform package.

Someone might ask if a variation of one-half inch in mated stock is tolerable. The variation cannot be more than ¼-inch. If a stocking is 29¾ inches, plus or minus, it will go either on the 29½-inch or the 30-inch stack. The ¼-inch variation in a stack of goods laid down under normal tension without crowding or stretching will stay mated. If the mater has always in front of her a given length to receive the stocking in hand without having to shift a number of stockings, there is less tendency for her to pull one to make it mate the other.

The mater works off of the stack of work with the foot turned from her so as to inspect the left side of the stocking, turns it over to lay it down and inspects the right side of the stocking. She is the judge as to which should go into first quality and mates only the firsts. All other defects are culled out and segregated as to defects. All grades of seconds are put to the side in one stack. All mends, picks, and pulled threads are put in the stack of menders on the opposite side. The re-boards are put in a lot and the re-dyes in another lot on the back of the table.

When the mater has completed mating the lot, she mates up the odd firsts into pairs as far as she can and the remaining few stockings which will not mate are thrown over with the re-dye lot. At this point all of the menders are straightened up, counted into dozens, folded over one time, and marked as to style, color and size, and put on the mender table. The same thing is done with the seconds except they are put on the seconds table. If there are only two or three stockings in the re-boards they are also put in with the re-dyes.

The re-dyes are counted and carried to the re-dye nets which hang on net racks especially designed to support the dye nets.

With the above disposition of the goods, the mater fills out her report showing the amount of firsts, seconds, mends, re-dyes, and re-boards. From these mater reports a summary daily report is made showing the total average percentages of each class.

The menders take the goods from the mender tables and mend them. All menders, after being mended, are put into the re-dyes. Re-dyeing and re-finishing of menders smooth out and modify the distorted stitches made by mending.

We have maters who work only seconds from the seconds table. They mate these seconds in the same way as the firsts are mated; the slight defects are mated in stacks and graded as irregulars, while the heavy mends are laid out and mated as seconds. From the seconds some few are graded as No. 2 seconds. The same operative folds and boxes these irregulars and seconds after they have been stamped by the regular stamper girl. These goods are boxed three pairs to the box. Less than three pairs are carried in labeled boxes in a cabinet designed for this purpose. When the girl carries an odd pair to

# QUITEX
## SPUN RAYON

**Strength, dull lustre, appealing appearance are features that have brought the great wave of popularity in favor of the new and outstanding Quitex Spun Rayon.**

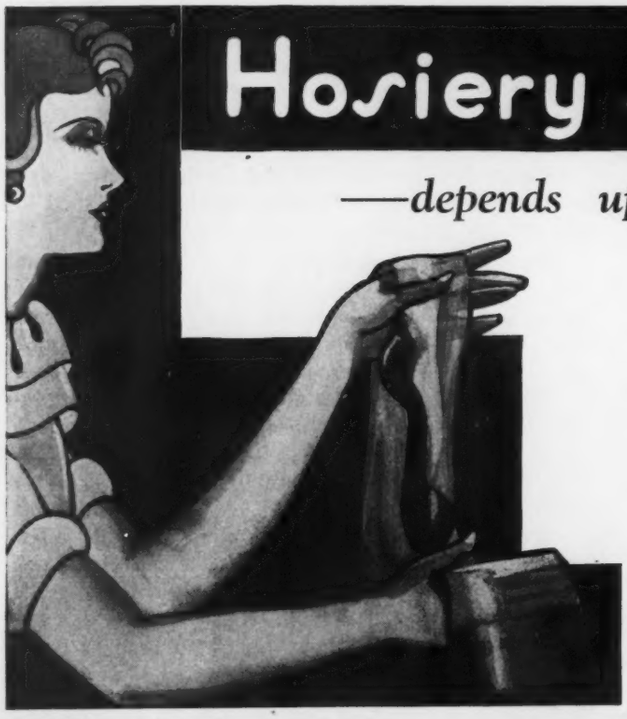
**For easier and larger sales—for more "I'll take this new weave", apply Quitex Spun Rayon to as many of your textiles as possible.**

**Let us send you samples of Quitex Spun Rayon.**

**Quissett Mill**
**New Bedford, Mass.**

Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY



# Hosiery Satisfaction

*—depends upon Appearance and Wear*
*—"BROSCO" Finishes*
*Assure Both*

Stockings treated with "BROSCO" Silk Finishes (and many leading brands are so treated) assure the purchaser true feminine smartness and longer active hosiery life with "run" possibilities reduced to a minimum.

In fact, when used in proper combination, "BROSCO" Finishes give any desired degree of low lustre, water and spot-proofing, softness and e'asticity—and all these advantages in ONLY ONE BATH.

There's nearly 30 years' experience behind every "BROSCO" Product.

Write for details, or have one of our practical men call without obligation.

*"BROSCO" registered in U. S. A. and Canada*

# SCHOLLER BROS. INC.

Mfgrs. of TEXTILE SOAPS, SOFTENERS, OILS and FINISHES—
Amber and Westmoreland Sts., Philadelphia, Pa.
and in St. Catharines, Ontario, Canada

this cabinet, if she finds two pairs in the odd box she takes the two pairs and combines them with the one pair to make a ¼ dozen box for stock.

We have a separate cabinet for the odd pairs of irregulars and the odd pairs of seconds. A box in the odd cabinet never carries more than two pairs.

In mating up the irregulars and seconds, any odd stockings that cannot be mated are also put in the re-dyes.

With this system each girl's table is cleaned up after each batch, whether it be firsts irregulars or seconds. The re-dye nets catch the few re-boards, all the odd stockings and all the mends. These re-dye lots are put through as special lots and handled as second lots by the seconds maters and are graded to their respective classifications just as the irregulars from the seconds table.

On first thought, one might think our re-dyes would be excessive, but they are not. Our actual re-dyes from spots or unlevel dyeing run less than one-half of one per cent. Our mends from the maters run around two per cent and the odd stockings and re-boards will run less than one-half of one per cent, so our re-dyes, taking care of everything in the way of culls which are so much trouble to the average finishing room, will average less than 3 per cent of all goods processed and makes possible a clean finishing room at all times.

There might be some just criticism for the extravagance of putting re-boards into re-dyes when they could easily be wet out and re-boarded. We do this if the quantity in any one batch would justify it, which seldom happens. A first-class boarder doesn't board re-boards. There is no excuse for re-boards due to workmanship. There is an occasional stocking which was too dry when boarded or dried at some point while it was being adjusted on the board or possibly wrinkled in stripping, but if these are to be properly re-boarded they must be thoroughly wet out and properly extracted, and in doing this some of the finish is removed, which gives them a below-par-finish. If re-boards are to be re-boarded they should be returned to the lot from which they were culled to insure perfect color matching, and worked up with the lot, but to hold up a mater in cleaning up her batch while a boy goes to the dye-house and boarding room to get a few stockings re-boarded is impractical.

The best solution to this problem is strict supervision in the boarding room to prevent re-boards.

The same criticism might be made of re-dyeing all mends, but our tests show that enough defects can be covered in re-dyeing of mends to move them up into a higher classification, to more than offset the cost of re-dyeing.

We find that by combining all the little problems into one big problem we can simplify the big problem. All the extreme odds get together and are mated and disposed of as a unit.

A good view of one of these units will put more fight into a good knitting organization than anything I know, and after all, the most of our finishing problems are just knitting problems.

CONTRIBUTOR No. 6366.

## Knee Action Control for Seamers

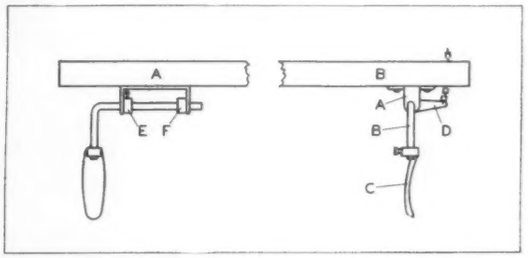
**A reader describes here a simple arrangement which he has found to reduce effort and increase efficiency on his seamers . . . . . .**

EDITOR COTTON:

I would like to describe for your readers a knee-action control for opening the cups on Union Special and Record seaming machines and for raising the presser foot on Merrow seamers.

The method of opening the cups or raising the presser foot on most seaming machines is to use a foot pedal fastened on the floor and controlled with the operator's left foot. This method makes it necessary for the operator to take her left foot off of the transmission pedal every time she needs to open the cups, which slows the seaming operation quite a bit.

We have devised a method for doing this that we call knee action control, which has proven to be a big help to the operators in speeding up production. The unit isn't hard to make and only takes a few minutes for installation. See the accompanying sketches which




show a side and front view of it. Part *A* is the bracket which is screwed to the under side of the seamer table. This can be a one or two-piece bracket. We had a brass casting made ¼-inch thick, shaped like a four-leaf clover, 3½ inches long and 3½ inches wide. Two of the leaves or ears are drilled for wood screws to fasten on the table, and the other two ears are drilled with ½-inch drill and then bent half way over to form a hanger for the shaft.

The shaft, *B*, should be 9 inches horizontal and 4 inches vertical, ½-inch diameter, cold rolled steel. Part *C* is the arm against which the operator's knee works. It can be a one-piece casting, or you could use a ½-inch collar and have a piece of scrap iron 1½-inch wide and 5½-inch long brazed on the side. This should have a set screw in the collar so it can be adjusted to fit the individual operator. Part *D* is the arm to which is fastened the chain that goes through the table to the machine. This could be a one-piece casting or a ½-inch collar and a piece of scrap iron 2 inches long tapered down from 1-inch wide to about ¼-inch, brazed on. A small hole should be drilled in the small end for the chain to be hooked on and a set screw put in the collar to fasten to the shaft.

Part *E* is a ½-inch collar which fits inside the hanger on the shaft to keep the end plate out; also it should be fastened to the shaft with a 1½-inch long hexagon set screw which acts as a stop screw to keep the knee lever in position.

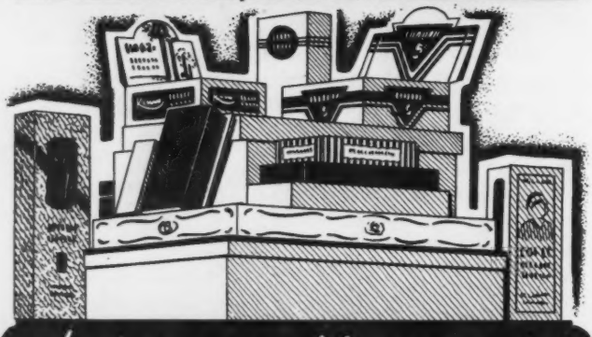
CONTRIBUTOR No. 6342.

The STANDARD · COOSA · THATCHER Line

Durene
Preemo Durene
Selo
Combed Peelers
Combed Saks
Carded Peelers
Threads

STANDARD · COOSA · THATCHER · COMPANY
CHATTANOOGA · PHILADELPHIA · CHICAGO · NEW YORK

Economical Handsome, Sturdy, Practical



what more could you want..?

A box by Old Dominion is everything a box should be. Let our own art department submit designs and suggestions to fit your particular box needs . . . no obligation.

OLD DOMINION BOX COMPANY, INC.

*Plants and Offices*

Lynchburg, Va. Winston-Salem, N. C. Burlington, N. C.
Asheboro, N. C. Charlotte, N. C.

OLD DOMINION
PAPER BOXES

AVONDALE MILLS

Sycamore, Ala. — Sylacauga, Ala.

OFFER THE ADVANTAGES OF LARGE FACILITIES — QUICK SERVICE

THEY CAN READILY SUPPLY ANY TWIST, PLY, OR PUT-UP IN CARDED OR DOUBLE CARDED YARNS FOR KNITTING, WEAVING OR INSULATING IN ALL NUMBERS FROM 3's TO 40's.

*Selling Agents:*

WATERMAN, CURRIER & CO.
INCORPORATED

BOSTON CHARLOTTE NEW YORK
PHILADELPHIA CHATTANOOGA

# THE KNIT GOODS MARKETS . .

THE hosiery primary markets were not a little disturbed early in March by reports of a weakening in prices for low-edge full-fashioned silk goods. Misleading reports of a few manufacturers having accepted low prices from an element of buyers for the trade had, necessarily, a depressing influence. Fortunately, with the application of heroic treatment to the menacing situation, price declines seemed to have been quickly checked.

Some of the manufacturers who had held out against raiders from the bear camp were on the eve of capitulating about the time when some brisk buying was in the immediate foreground. Complications in the controversy over the three-carrier ringless patent did not help matters for either side in the rumpus. In the circumstances, it was regarded evidence of fundamental soundness in the markets that the patent warfare and circulation of bearish price stories fell short of causing the damage that might have been expected.

### Plan to Halt Price Breaks

In various group meetings of northern hosiery manufacturers during March there developed an apparently unanimous feeling that prices for hosiery were destined to advance during the spring campaign, barring unforeseen happenings such as might adversely affect commodity markets in general. It was not overlooked that in many instances the advances which were announced late in December and early in January were not adhered to. It proved on investigation, however, that some of the low prices were those of manufacturers who had oversold. In other instances there was an eagerness for business that disregarded cost. It was established, however, that much of the chiseling could be properly attributed to misleading statements by an element among buyers playing one mill against another. This got to be so common and so disturbing that at the February meeting, the Full Fashioned Hosiery Manufacturers, Inc., of which Hugo Hemmerich, general manager of Berkshire Knitting Mills, is president, organized a bureau of information on prices.

Under the plan provided for at the time, manufacturers hearing of unbelievably low prices report them to this bureau and supply such information as might assist in tracing the reports as to accuracy and origin. By this means price misrepresentation was checked but not until the market had slipped away from the near peak for the winter season.

Early in March the opinion gained ground among manufacturers and buyers for the trade that around the middle of the month demand for hosiery of virtually all classes affected in seasonal distribution would become pronounced. Resistance to quotations seemed to take more definite form, and it appeared some few weak manufacturers were slipping. About this time reports reached the Price Information Bureau of the Full Fashioned Hosiery Manufacturers, Inc., that a well known department store in New York had made provision for a promotion sale during the second full week of March. "Evidence has reached us," an official of the association admitted, that the store in question planned to offer "women's four thread 42-gauge, silk hosiery, ringless, at 50 cents a pair, and we are informed," the association official continued, "that the hosiery for this sale was sold to the department store in question for $5.75 a dozen."

It was believed by manufacturers upon receiving the report of the proposed sale of four-thread 42-gauge ringless hosiery at 50 cents a pair was a part of a plan to break down the price structure at a critical moment. "It is plain," said a manufacturer, "that a sale of stockings for 50 cents at a profit of only 25 cents a dozen was not intended as purely a promotional transaction."

Buyers for some leading department stores declare it is their intention to stock up conservatively with knee high hosiery although they look for the short stocking to prove very popular. It is pointed out, as a reason for caution, that while the knee highs were in good demand last summer, only a comparatively few mills are now making them, while at present it appears there is a possibility of oversupplying the market.

Some interests appear to feel that offerings of seamless-knit knee highs are liable to detract from the general interest in the short stocking.

Furthermore, say buyers, the seamless can be sold at a much lower price than the full-fashioned, and while this would indicate a probable increased consumption, it might also have the effect of making the knee highs appear commonplace. These are among the reasons assigned by some of the buyers for their intended conservatism in putting them in stock.

The extent to which production of the short stockings is being increased seems to be indicated in reports of declining sales of mercerized yarn to full-fashioned hosiery mills during the February-March distribution period.

Opposing forces, one striving for preservation of the ringless hosiery patent so far as developed, the other apparently bent upon having the patent declared invalid, are nearing the cross roads.

It is believed in the hosiery trade that the crisis is not far distant and that, barring time that may be consumed in rulings by the courts, it is simply a question of weeks when the ringless stocking will either have taken the place designed for it, when first it was launched as a commercial proposition, or, at the worst be left to compete with the purely conventional.

It remained until early March for the sensational turn, which may not have been altogether unexpected, in view of the long drawn out fight by powerful interests from the time the license to manufacturers of the three carrier ringless first was granted almost a year ago. It was a matter of no little surprise however when interests such as Gotham Silk Hosiery Co., Rosedale Knitting Co., Nolde & Horst Co., and others conspicuous in the industry, were announced as having combined to test the validity of the Charles J. Kaufman patent, owned by Julius Kayser & Co. and the rights controlled by Textile Patents Corp.

This step was decided on by the opposition after suits alleging infringement of the Kaufman patent had been filed in Federal Court against Rosedale Knitting Co., Lebanon Mills, Inc., of Lebanon, Pa., and Arthur's Apparel Shop, a retail concern of Wilmington, Del.

The Lebanon Mills, by the way, and No-Mend Hosiery Co., of Philadelphia, appear as virtually under the same management, Marshal V. Moss being president of both. According to persons speaking for the Textile Patents Corp., the No-Mend Hosiery Co. distributes the production of Lebanon Mills. Other suits for infringement are threatened.

While no one will speak officially for the Textile Patents Corp. and licensed manufacturers, on the one side, and the opposing forces on the other, the latter, it appears, are bent on having the patent declared invalid, and it was in evidence during the early stages of the fresh complications last month that this group was increasing in numbers. The explanation for this would appear not hard to find, for the reason that if a patent shall be declared invalid quite a few manufacturers and dealers who are threatened with infringement prosecution would feel very much relieved. On the other hand, it is pointed out, should the patent be sustained, quite a number of suits probably would ensue and the retail trade doubtless would continue to be disturbed for quite a time.

While at first blush it seemed logical that the opposition, numbered among whom were alleged infringers, would increase more rapidly in numbers than the owners of the patent, it has developed that the latter issued a number of new licenses toward the middle of March and were receiving promise of cooperation from some important retailers. The number of licensees is believed to have been increased to 50.

It was not long after the opposition appeared in the picture that reprisals were intimated. For example, interests in control of the Kaufman patent and the rights under this patent have said unofficially, but with apparent authority, that the Textile Patents Corp. is expected to limit the number of licensees to 75 per cent of the potential production of ringless hosiery by the 3-carrier process. This, it is pointed out, would tend to avert overproduction, while supplying the innovation stockings in sufficient quantity to virtually eliminate the conventional type of stocking except as a simple price proposition.

The group supporting the patent, whose war board has had several conferences, is represented as intending to enforce that provision of the license contract which stipulates a royalty of 10 cents per dozen after a given time, and hold future licensees for the 10 cents royalty from January 1, 1934. Thus far the royalty remains 5 cents a dozen.

The first split by which what is known as the "outer patent pool" became a factor in the ultimate fate of this

# *Thirty-first Annual*

# KNITTING ARTS EXHIBITION

**COMMERCIAL MUSEUM . . . PHILADELPHIA**

## APRIL 22, 23, 24, 25, 26, 1935

AUSPICES

NATIONAL ASSOCIATION OF HOSIERY MANUFACTURERS

and THE UNDERWEAR INSTITUTE

### YES BUSINESS IS BETTER!

Again the KNITTING ARTS EXHIBITION becomes the self-starter for 1935 business and leads the industry out of depression. This great Exhibition spreads its effect over the entire country—creates new interest and turns thoughts toward purchasing.

Hundreds of manufacturers, comprising the largest in the industry, including knitting, dyeing, drying machinery, together with allied products and mill supplies will reveal their latest designs and new mechanical features at the Exhibition. They have found it the most economical method of demonstrating their product to the entire knitting trade.

It is the great meeting-place for thousands of the industry's executives, mill officials, purchasing agents, sales and service managers. It is their only opportunity to view the improvements of the year—to make comparisons—at one time—under one roof—AND THEY COME TO BUY.

### BUSINESS IS BETTER

No manufacturer—distributor—jobber selling the knitting or allied trades can afford to pass up the opportunity of displaying and actually demonstrating their product.

The cost of space is only $150 for 100 square feet. It includes booth complete with sign, desk, chairs, rug and clothes tree (where current is necessary for the operation of machinery, it is also included).

### SPACE NOW SELLING

***For full information, write, wire or phone***

## KNITTING ARTS EXHIBITION

**327 Park Square Building** **Boston, Mass.**

**ALBERT C. RAU, Manager**

## REDUCED RATES ON ALL RAILROADS

patent, seems to have occurred over the amount of the royalty, certain large direct to retailer mills insisting that it be limited to five cents. The "outer" pool, now referred to as "the opposition", also protested inclusion in the contract of a provision classifying chain stores as "retailers". This provision is retained and, it would appear, is a thorn in the side of large knitters selling to chain stores.

There seems no doubt that the 3-carrier patent may have sustained considerable damage, from a commercial view, by reason of the time spent in formally launching ringless stockings in the retail trade, this loss of time being attributable to the stand taken by the "outer" patent pool. During this time hosiery marketed as ringless was produced by means of a single carrier and put on the market at competitive prices. This was one of the things that the ringless stocking was intended to circumvent—that is, establish profitable prices that could be maintained in competition with types of hosiery either manufactured by other than the patented mechanism or representing infringement. Obviously, had the division among manufacturers not occurred, it eventually would have become as simple a matter to protect the true ringless as the patent for "Pointex".

Speaking of an indicated trend in interest in 3-carrier ringless hosiery, some retailers, it is stated by a widely known distributor, prefer that the term ringless be not stamped on the hosiery bought for their departments. This, of course, opened a way to offering hosiery free from rings obtained simply by closer inspection of the production of stockings knitted in the conventional way, and in sequence constituted a factor in the failure of mills and merchants to stabilize prices.

It appeared that the longer the warfare of opposing interests continued, the lower the prices for alleged ringless hosiery became, notably in some of the better known New York department stores. This in itself had the effect of retarding distribution of not only ringless hosiery, but the conventional and certain other innovations, patents for which have been in litigation for several months.

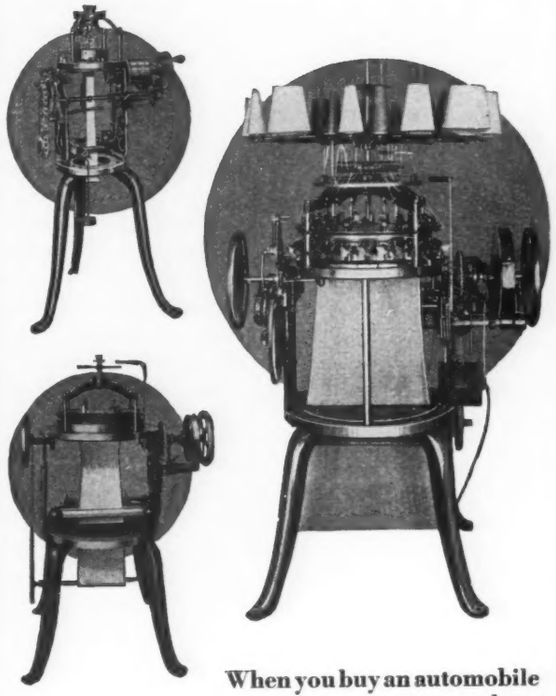
Among hosiery manufacturers in Philadelphia owing allegiance to neither the patent group nor the opposition, the opinion became common that with the prospect of additional litigation, the hosiery market might suffer some disturbance on the eve of active distribution for the spring season. The break over the ringless patent was viewed by many neutrals as the most serious rift ever occurring in the full fashioned hosiery industry, and, it was felt, might prove a more serious matter than had appeared to those becoming parties to the threatened prolonged litigation.

While, obviously, it has been difficult to obtain definite statements of important manufacturers commenting on the new situation, one was found willing to pass judgment on the snarl. It appears that in conformity with provisions of the United States patent laws, the owner of a patent enjoys an exclusive right to fix the price at which the patented article may be sold. In this instance this right is enjoyed by Julius Kayser & Co., while several leading manufacturers figuring conspicuously as the promoters of the patent in the trying days of the application for a patent, under certain conditions which might arise are permitted to destroy the "price fixing" condition applying to Julius Kayser & Co. if the prices prove detrimental to either the branded or unbranded lines of licensees or both.

In the opinion of the hosiery manufacturer referred to, it was this price fixing provision around which the outer pool, or opposition, constructed the foundations for its recent action. It appealed to numbers of manufacturers, in the absence of a technical explanation, says this manufacturer. It was his understanding that the opposition would exact a contribution of two dollars per machine from those participating in the proposed litigation aimed at the Textile Patents Corporation.

Analyzing the agreement which the Textile Patents Corporation has with licensees, the commenting manufacturer says he finds advantages and disadvantages for both groups. He maintains that the "very" inside group member is committed to pay a royalty during the life of the patent, which is 17 years, while those constituting the outer group are obligated to pay a royalty for only the life of the agreement, which may be cancelled upon giving six months notice of cancellation. For the "very" inside group there is no price fixing condition, while there is a "condition" that is cancelled upon the sale of goods for less than the minimum price by any licensee, including the inside group. It is provided in the royalty agreement form that "price fixing will not be established until after successful adjudication of the patent in a lower court—lower courts being designated in order to save time, it was pointed out by the manufacturer commenting on the form of contract.


MODERNIZE *your* PLANT *with* BRINTONS



*Ribbers* of every type.

*Jersey Machines* Plain and Fancy Stitches.

*Rib Body Machines* For Underwear and Bathing Suits.

*Sweater Machines* Rib and Jersey Types.

*Special Knitting Machines* From ¼ inch to 36 inches.

When you buy an automobile—you are sure to purchase a car with a proud performance record. Why not apply the same excellent logic when you equip your mill with knitting machines? The name Brinton stands as high in its field, as Rolls-Royce, Packard, and Cadillac in the automotive industry.

*Depend on Brintons*

H. BRINTON COMPANY
3700 Kensington Ave., Phila.
*New York Office:* 366 Broadway

CIRCULAR KNITTING MACHINES
BRINTON
of EVERY Kind for EVERY Purpose

# REVIEW OF THE YARN MARKET

**Philadelphia, Pa., March 6, 1935.**

VOLUME of new business has been maintained fairly well in carded cotton sales yarn, with prices well stabilized for most numbers and with delivery requisitions coming through beyond expectations earlier this year. There continues, however, a strong under-current of complaint among spinners, as regards lack of opportunity to sell at a profit. In various directions the yarn trade has been engaged in investigation of the underlying causes of this condition. Thus far it appears as if profitless selling of yarn is largely due to causes which are not within the power of the industry to supply a remedy.

Combed peeler mercerizing counts have furnished the high spot in yarn activity for some weeks. Sales, shipments and production remain at about their peak for the late 1934 and early 1935 buying movement in this division. To some extent this has been due lately to contracts placed by the Government for garments for the Civilian Conservation Corps, which resulted in prompt placing of orders for combed yarns aggregating several hundred thousand pounds. This business occurred at a time when no surplus supplies of moment were available. Combed yarn spinners are said to have been operating right along at a weekly average of 55 to nearly 60 hours per week. Sources of small lots of distress yarns in this division seem to have dwindled to a very small group, whose lack of capital induces them to resort to unusual expedients to remain in business in the hope of obtaining financial aid sufficient for rehabilitation.

Yarn re-orders from manufacturers of heavyweight underwear, which normally should have commenced to reach spinners about the middle of February, made a deferred appearance, accompanied by insistent demand for quick shipment. This has resulted in a rush of production among mills making heavy count carded yarns. There will this month be additional contracting by the Government for textile-garment supplies needed by the conservation corps and the Army.

As to the price situation, the large majority of spinners have maintained their quotations at a minimum range that might be sufficient to give them most of the direct elements of their manufacturing costs. But still there is a group of yarn mills which continually undersells this range, and when some of these undersellers book enough orders to enable them to withdraw from competition, their places invariably are taken by others, eager for new orders promptly.

The industry, through its code representatives and the institute, as well as individually, has right along been sounding out the Government as to prospects for removal or amendment of the cotton processing tax, which many have felt is partly responsible for certain alleged abuses that have crept into the yarn business.

The more representative sale yarn organizations, however, have lately appeared to veer from this line of thought. While they would gladly be rid of the cotton processing tax, they have no real expectation that the Government is likely in the near future to give up this source of income. This being their view of the outlook, they are accepting the processing tax as one of the fixed charges of doing business.

Some spinners, however, whose capital has been seriously impaired by the depression, and who claim that the strain has been increased on them by cost-raising regulations of the NRA, maintain that the processing tax is an obstacle to their selling yarn in volume large enough to permit them to reduce their unit cost of production so as to partially offset the NRA cost handicaps. It is among this group of yarn mills that there is slowness in paying the processing tax, their competitors say, adding that the agitation against the tax is chiefly among those who are short of working capital.

Outstanding as a phase of the markets for cotton yarns for more than a half of the first quarter of 1935 is the narrow range in quotations, amounting to a half cent per pound on carded numbers. Sale prices thus have been maintained on a basis of approximately 26½ to 27 cents for 10s single on cones. Some few sales of considerable poundage seem to have gotten through at around 26 cents. For 30s double carded, sale prices ranged from 33½ to 36 cents, depending on quantity. Weaving counts appear to have been bought closer, in instances. Trading in this group has been slow, but weights of yarn moving to weavers may have been greater, relatively, than in the case of knitting yarns.

There has been a modest slowing down in mercerized yarns, attributable mainly to lessened demand from the hosiery trade in February and the extent to which knee-high stockings for women are being substituted for the regular length. Prices remain about at the level of recent months, on a basis of 68 to 70 cents for 60s/2.

Worsted yarns in early March showed a softening, on light demand from the men's wear piece goods trade. The effect of this was to encourage knitters to play the market for an easing. There had been a slight decline in prices for raw wool, which may account in part for the mild slipping in yarns, although it has been some time since prices were on a parity with wool cost.

## Let's Meet at the Knitting Show

Representatives of COTTON'S editorial, advertising and subscription and service departments will be in attendance at the Knitting Arts Exhibition in Philadelphia April 22 to 26. They will occupy Booths No. 354 and 355 in the exhibition hall, and will welcome visitors. The Atlanta office has available a supply of admission tickets to the exposition and will gladly furnish copies of these upon request.

*The 2 necessary ingredients to make Quality in textiles*

IN Textile fabrics, there are two essential ingredients to insure true quality—Durability and Appearance. The best appearance is possible only when the fabric is free from impurities, such as dirt, grease, etc. This requires a certain *maximum* pH or caustic strength in the boil off. To gain the greatest possible durability, the fibres must be protected from tendering or damage, which requires the use of a certain *minimum* of pH or caustic strength to avoid damage and yet accomplish the work within a reasonable length of time.

To insure these two necessary ingredients in your fabrics, and practically eliminate costly errors in determining and maintaining accurate pH value, you may depend upon DEPURATOR or NEUTRALITE. It means more perfect wet finishing at lower cost. Ask for details.

DEPURATOR XX
*for Cotton*
NEUTRALITE XX
*for Silk and Wool*
NEUTRALITE XB
*for Heavily Oiled Rayon and Wool*

DETERGENT PRODUCTS CORP.
ATLANTA, GA.
Columbia, S. C. Charlotte, N. C.
Texarkana, Ark. Buffalo, N. Y.

**COULD YOUR** goods stand a tensile strength *gain?* Mills with high strength losses now report gains since they switched to Metso for kier boiling.

Metso is pure sodium metasilicate, quickly soluble in water. Its high alkaline efficiency takes out more dirt. Thus the cloth is whiter and needs less bleach. The reduction in bleach consumption is often 50%.

Our experience in the use of Metso in scores of kier boiling formulae is at your disposal.

**PHILADELPHIA QUARTZ CO.**
General Offices and Laboratory: 125 S. Third St., Philadelphia.
Chicago Sales Office: Engineering Bldg. Stocks in 60 cities.

METSO
SODIUM METASILICATE U. S. Pat. 1998707

IMPROVE RESULTS - LOWER COSTS

SOME TIMELY SUGGESTIONS ABOUT KALI PRODUCTS

**HYDROXY SIZE**, insures good weaving and greater production. Is easily removed by the dyer without punishing the fabric. Ideal for acetate, viscose and Bemberg.

**HYDROXCENE** for treating Rayon for crepe filling. Produces a wonderful pebble and hand, releases quickly and easily in hot water.

**SULPHONATED OLIVE OIL** for the finishing plant. Made from olive oil—no adulterants.

**ALL TYPES OF FINISHES** for the Hosiery, Rayon, Cotton and Woolen industries.

**HOSIERY FINISHES**

**DELUSTRANT**—For the desirable dull effect.

**DRESDEN FINISH**—For waterproofing.

**KALIZINE**—For giving body to sheer hosiery.

**SERINOL "C"**—For soaking hosiery tram for direct knitting and three carrier knitting.

The KALI Mfg. Co.
Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

SOLOZONE
REG. U. S. PAT. OFF.
*bleaches cotton knit goods*
TO A TRUE PERMANENT WHITE..

**and saves 25 to 30% in peroxide costs**

Where high quality and low cost are important factors in bleaching knit goods, SOLOZONE (Du Pont Sodium Peroxide) is the best-suited material.

Savings in peroxide costs from 25 to 30% are possible with SOLOZONE, because of its high content of bleaching oxygen (20.5% + by weight) and relatively low cost. The uniform, permanent white it gives further adds to profits by building customer satisfaction and sales volume.

Write to the R & H office nearest you for further information on this low-cost way to high-quality cotton bleaching.

DU PONT
The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & CO., INC.
Wilmington, Delaware
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

FLEISCHMANN'S Diastafor

"SOLVES De-Sizing PROBLEMS"

Diastafor Department
STANDARD BRANDS INCORPORATED
595 Madison Ave., New York, N.Y.

SOLVAY PRODUCTS

SOLVAY
TRADE MARK REG. U.S. PAT. OFF.

Technical Service

We maintain in our Technical Service Department a staff of experts in Alkali. These men have studied the problems, and know the particular and individual needs of the various industries using alkali. If you have a problem affected by soda ash, caustic soda or any other alkali, that is causing you anxiety, we will be pleased to have you correspond with SOLVAY SALES CORPORATION direct, or with the nearest branch office or distributor. We will, if necessary, gladly send a man who has specialized in your problem to assist you in working out a satisfactory solution.

SOUTHERN DISTRIBUTORS
Charles H. Stone, Charlotte, N. C.
Woodward Wight & Co., New Orleans, La.
J. T. Sudduth & Co., Birmingham, Ala.
Miller-Lenfestey Supply Co., Tampa, Miami and Jacksonville, Fla.
Burkart-Schier Chemical Co., Chattanooga, Tenn.
Paper Makers Chemical Corp., Atlanta, Ga.; Marrero, La.

SOLVAY SALES CORPORATION
*Alkalies and Chemical Products Manufactured by The Solvay Process Company*
40 RECTOR STREET NEW YORK

HARRIS
SPASE-RITE REEDS

Regular repeat orders from a constantly growing number of leading Southern mills are proof of the service being secured from HARRIS SPASE-RITE REEDS.

Our extensive experience enables us to manufacture reeds of superior workmanship and material, designed to meet the individual requirements of your mill.

Harris Manufacturing Co.
207 WALKER ST., ATLANTA, GA.

KENWOOD

KENWOOD WOOL PRODUCTS REG. U.S. PAT. OFF.

*Tanned*
Sanforizing Blankets
Palmer Blankets

F. C. HUYCK & SONS
KENWOOD MILLS
Albany, N. Y.

NRA

*For every textile need, we make a suitable Brush*

*SEE OUR EXHIBIT--BOOTHS 409-410*
*SOUTHERN TEXTILE EXPOSITION*

NRA

ATLANTA BRUSH CO.
*Manufacturers -- Designers -- Repairers*
ATLANTA, GA.

Arguto NON-METALLIC

20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial

ARGUTO OILLESS BEARING CO.
Wayne Junction, Philadelphia, Pa.

# TRITON M-25

*A Stable, Non-Volatile* WETTING AGENT *for Mercerization*

**QUICKER MERCERIZATION**

**UNIFORM PENETRATION**

**FULL, EVEN SHRINKAGE**

**DEEP SEATED LUSTRE**

**LEVEL DYEING**

**100% RECOVERY**

**RÖHM & HAAS CO., INC.**

**222 West Washington Square Philadelphia, Pa.**

**Weavers, everywhere, use and recommend**

# VICTOR

## MILL STARCH

**"THE WEAVER'S FRIEND"**

THIN BOILING GREATER PENETRATION
CARRIES WEIGHT into THE FABRIC
BETTER PRODUCTION

*Distributed By*

**DANIEL H. WALLACE** SOUTHERN AGENT **GREENVILLE, S. C.**

C. B. ILER, GREENVILLE, S. C. F. M. WALLACE, BIRMINGHAM, ALA.
L. J. CASTILE, CHARLOTTE, N. C.

*Manufactured by*

**THE KEEVER STARCH CO., COLUMBUS, OHIO**

# BOSSON & LANE, INC.

*Manufacturing Chemists*
*Established Jan. 1, 1895*

**Works and Office, Atlantic, Mass.**

**High Grade Castor Oil Products**

*Sulphonated-Saponified*

**Soluble Oil** **Para Soap Oil**
**Turkey Red Oil** **Castor Soap Oil**
**Soluble Pine Oil** **B & L Bleaching Oil**

**PENTRALYN,**

**a superior assistant for Beam, Spool, Bobbin and Package Dyeing.**

**Bleach Softener CSO, Finishing Sizings and Softeners**

**VICTROLYN,**

**the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.**

**B & L Bleachers' Bluings and Violet Tints**

*GOOD MONEY VALUES*
*-FREEDOM FROM WORRY*

*for* LOW COST BLEACHING *of any fabric*

# BECCO

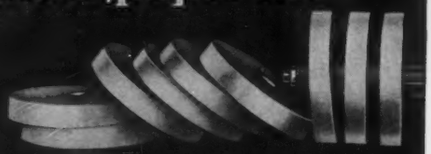
CONCENTRATED HYDROGEN PEROXIDE

Hundreds of mills throughout the United States have made this up-to-date discovery: that *Becco* Concentrated Hydrogen Peroxide is a short-cut to superior bleached goods at lowest unit cost . . . *Becco* Technical Service is prepared to show your plant the way . . . Write for full details.

BUFFALO ELECTRO-CHEMICAL CO.
BUFFALO, NEW YORK
Boston New York Philadelphia Chicago Charlotte
Toronto Montreal

# CAMACHINE

Slitting and Roll-Winding machines for fabric rubber, paper etc.



CAMERON MACHINE COMPANY
61 Poplar St. Brooklyn, N.Y.

# GASTONIA BRUSHES

*"Made by Gastonia"*

**Is Positive Assurance of Matchless Brush Quality**

Gastonia Brushes have never been sold on price, because price determines quality and we won't permit anything but the highest quality materials and workmanship. "Made by Gastonia" is positive assurance that you're getting the best that can be secured in Brushes. May we send prices?

GASTONIA BRUSH CO.
GASTONIA, N. C.

*Manufacturers, Repairers and Designers of Textile Brushes*

*There is Nothing Like*

VEG TAN

REG. U. S. PAT. OFF.

**CALF**

*for Roller Covering*

**R. NEUMANN & CO.**
Hoboken, N. J.

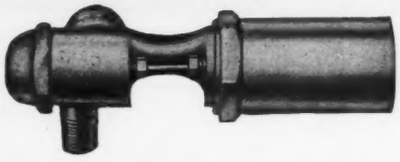
# *No More Secrets*

**The Audit Bureau of Circulations was formed by large advertisers and publishers to put a ban on circulation secrets. Publications willing to have their records checked by impartial auditors belong to the Bureau, and the number of papers they sell is published to the world. No one doubts the "A. B. C." report. It eliminates unknown quantities.**

**COTTON**

**ATLANTA, GEORGIA**

# No Clogging in This Humidifier Head



THE defect of clogging in many humidifier heads not only wastes time and labor, but air and horsepower, not to speak of the troubles caused by uneven humidity. The JACKSON Automatic Atomizer is no experiment but is now in use in many mills. It does not clog because it automatically and thoroughly cleans itself every time the humidifying system shuts off. All parts are non-corrosive. Capacity jets are interchangeable.

Maintain the full capacity and efficiency of your humidifying system with JACKSON Automatic Self Cleaning Atomizers. A trial will convince you, too. Quotations on revamping your system or complete installation sent gladly on request to Jackson Moistening Co., Inc., 533 Bedford St., Fall River, Mass., or to G. A. White & Co., P. O. Box 533, Charlotte, N. C.

# JACKSON
## Automatic ATOMIZER

# AN UP-TO-DATE PRINTING PLANT

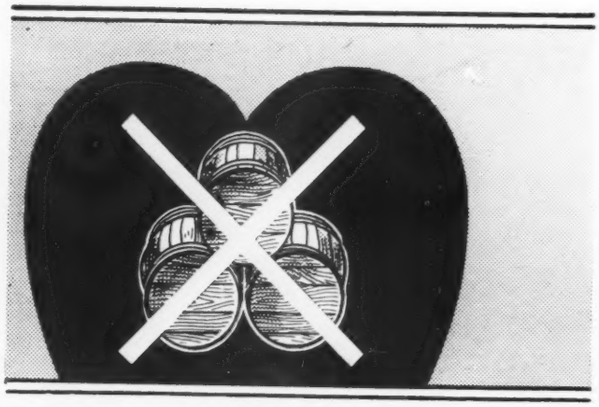
equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

*Write us and let us quote you on anything from a postal card to a full bound book.*

## The A. J. Showalter Co.
PRINTERS AND PUBLISHERS
DALTON GEORGIA



# 1 barrel of Caro-Gant replaces 3 barrels of Sizing Compound

HERE is the most efficient as well as economical and convenient sizing assistant that will assure you cleaner looms and higher quality fabrics.

Being 100% pure, with no water or inert vehicles, it goes further—1 barrel of Caro-Gant together with a small amount of tallow will replace 3 barrels of sizing compound. Here is the most uniform mixture of an adhesive colloid easily and quickly secured.

The surprising effectiveness of Caro-Gant will be demonstrated to you without obligating you in any way. Write

THE HART PRODUCTS CORP.
1440 BROADWAY
NEW YORK
N. Y.

# hart
# PRODUCTS
BASED ON RESEARCH

# COMFORT RELAXATION!

Comfort and relaxation are enjoyed by guests of the Atlanta BILTMORE to a superlative degree. Rooms are large and commodious, with full outside exposure; furnished to enhance the feeling of ease and contentment. Roomy baths, and circulating ice water, of course.

Add to comfort and relaxation such thoughtful conveniences as one day laundry service without extra cost; service at your elbow, reasonable rates, and the choicest foods of the world on your table—and you have a few reasons why more and more "people who know" are becoming regular guests of the

# ATLANTA BILTMORE

*"The South's Supreme Hotel"*

**RATES:**
Single—$3 $4 $5
$4.50 $5.50 $6.50
Two persons to room, double bed.
$5 $6 $7
Two persons to room, twin beds.

**MEALS:**
**Dining Room:** Breakfast, from 35c.
Luncheon, from 75c.
Dinner, from $1.00.

# COMING TO PHILADELPHIA?

**A SYMBOL**

HOTEL PENNSYLVANIA PHILADELPHIA

**OF HOSPITALITY**

When you visit Philadelphia make **HOTEL PENNSYLVANIA** your home . . . You will find its location convenient—ten minutes to the business section . . . away from congestion and noise. . . . Known the world over for its hospitality . . . food that satisfies.

**600 ROOMS, Each With Bath**
**From $2.50 Single, $4.00 Double**

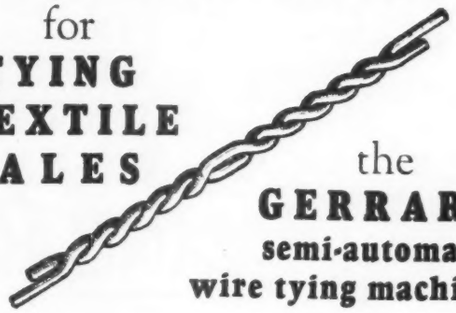
## HOTEL PENNSYLVANIA

**39th and CHESTNUT STREETS**
**PHILADELPHIA**

The New ROY Solid Vitrified Wheel Traverse Grinder is being recognized as by far the most efficient means of grinding Cotton Card Cylinders and Doffers.

B. S. Roy & Son Co.
Worcester, Mass.

you'll be **"THERE..."**
--and we'll be **"THERE"**
with a
***brand new marvel***
for
**TYING TEXTILE BALES**



the
**GERRARD**
**semi-automatic wire tying machine**

*see it at*
**BOOTH 244**
*Southern Textile Exposition*
*Greenville, S. C.*

GERRARD
*The Tie That Binds*

**THE GERRARD COMPANY, INC.**
**2915 West 47th Street** **Chicago, Ill.**

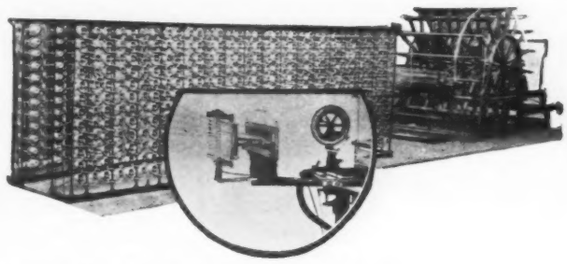
# *The American Business Paper*

ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

*Consider these features of well-conducted business papers, and their influence on the development of business technique:*

NEWS which, in the business paper, means the presentation of all angles of controversial matters; the rapid dissemination of information concerning shifts proved products; the spread of knowledge concerning shifts in personnel in an industry, so important to all concerned; the exhaustive studies of conditions and trends which show in what directions industry is moving; the co-relation of specific developments in an industry with general movements in business; the technical information which, in any one issue of a competent business paper, might amount to as much as an individual could hope to gather in a lifetime; and over and above all this detailed material is the editorial comment, sifting, comparing, commenting, searching out the basic elements, organizing the mass of news and information into compact, usable generalizations.

**The American Business Paper is one of the evidences of America's willingness to learn. Like its widespread system of democratic education, the Business Paper serves an industry's need for impartial information, placing at each reader's command the same accumulation of data, for such use as he may make of it.**



**"More Economical - Faster Warping"- With This Creel**

*Manufacturers of horizontal and direct beam warpers.*

*Oilless bearing winders, Quillers and quiller tensions and other preparatory machinery.*

Leading mills using this creel have found that it gives them "More economical and faster warping." . . . . You will find this creel equally effective in your plant . . . . Write for descriptive folder.

Our engineering department will be glad to work with manufacturers seeking to improve their methods either in the attainment of higher speeds, enhanced quality, or lowered costs.

**Sipp-Eastwood Corporation**
**Paterson, N. J.**
Southern Reps.: Carolina Specialty Co.

HURLEY-JOHNSON CORP.
25 WALKER ST., NEW YORK
*SOLE AMERICAN AGENTS FOR*
JAMES KENYON & SON, LTD.
BURY, LANCASHIRE, ENGLAND
*Celebrated*
LAPPINGS and BLANKETS for PRINTING MACHINES
CLEARER, ROLLER and SLASHER CLOTHS.
*For Best results in Sanforizing use*
KENYON'S ENDLESS WOOLEN BLANKETS

*Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.*

Ralph E. Loper Co.
*INDUSTRIAL ENGINEERS*
*Specialists in Textile Costs Over 22 Years*
FALL RIVER, MASS. GREENVILLE, S. C.

# TRADING POST EXCHANGE

**BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES**

*DISPLAY RATES*

Rates are net, payable in advance each month. No commissions or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

| | Per Inch | | Per Inch |
|---|---|---|---|
| 1 inch | $5.00 | 15 inches | 4.20 |
| 3 inches | 4.80 | 20 inches | 4.00 |
| 6 inches | 4.60 | 50 inches | 3.80 |
| 10 inches | 4.40 | 100 inches | 3.60 |

*UNDISPLAYED*

Advertisements set "Want ad" style. Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, rent or wanted and professional cards are accepted at display rate only.

Box number addresses care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

Wanted — a Product to Manufacture

One of our clients, a New England manufacturer with a sales organization contacting textile mills throughout the world, desires to manufacture and sell accessory of merit, preferably covered by strong patents, and applicable to existing looms or other textile machinery. Strictest confidence observed.

William L. Fletcher, Inc.
8 Newbury Street,
Boston

BETTER TEXTILE MACHINERY
GREATER SAVINGS

Specializing in Textile Machinery for relocation
—::—
ENGINEERING INSPECTING AND APPRAISING

BETTER because of twenty years experience Building, Engineering and Selling with largest machinery builders; can select the Best.
SAVING your time and expenses by offering only best and buying direct from source.

GEORGE F. LANGEVIN
20-22 Howe Building, Lowell, Mass.

Paul B. Eaton
PATENT LAWYER
1408 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
Former Member Examining Corps
U. S. Patent Office

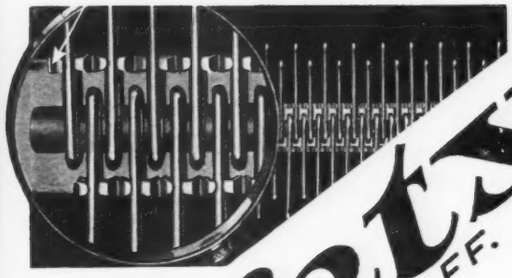
POSITION WANTED
Full Fashion Hosiery—Over fifteen years experience, handle help successfully, thoroughly experienced fixer and foreman, capable of starting new mill, train help, also very familiar with seamers and loopers, good reference. Address Box 134, c/o COTTON, Grant Bldg., Atlanta, Ga.

HEDDLES
C
N
FRAMES
I
R
REEDS
P
X
HARNESS

ATLANTA
HARNESS - REEDS
FRAMES - HEDDLES
ATLANTA
HARNESS & REED MFG. CO.
ATLANTA, GEORGIA

The E's with which ATLANTA products give 100% performance in your mill comes directly from our long EXPERIENCE

ATLANTA HARNESS & REED MFG. CO.
P. O. BOX 1375 . . . ATLANTA, GA.



Safety
REG. U.S. PAT. OFF.

See that Steel Binder Bar

BELT HOOKS
Lowest in Final Price!

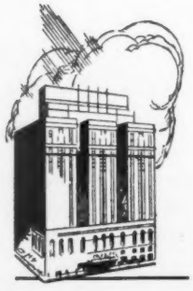
A little more by the box—
a lot less by the year—because
—NO WASTE hooks — quicker,
easier lacing — longer life.

*Ask Your Jobber—He Knows!*

**Safety Belt-Lacer Co.**
FACTORIES BLDG. TOLEDO, OHIO

...HAVE YOU HEARD *the one about the traveling salesman?*

He went to bed at the William Penn and slept twenty years! Well, maybe that is a little exaggerated. But anyway, the beds at Pittsburgh's number one hotel are so comfortable you don't ever want to get up. The food in the four famous restaurants is equally exceptional, and the prices reasonable. Quiet, well-furnished rooms, $3.50 single; $5.00 double, all with bath.



1600 ROOMS . 1600 BATHS

HOTEL WILLIAM PENN
PITTSBURGH, PENNA.

COLE
TANKS TOWERS

Cole Tanks and Towers offer very distinctive advantages in both design and workmanship. They have been developed over 80 years of experience to the highest state of efficiency and hundreds have been erected and are giving perfect, uninterrupted service in every section of the country.

We also specialize in Boilers, Kiers, Acid Tanks, Stand Pipes, Smoke Stacks, Chemical Vessels, Oil Tanks, Air Receivers, Welded Pipes and Tanks, Monel Tanks, Kettles, Storage Bins and other forms of steel plate construction.

*Our Engineering Department will be glad to cooperate and submit designs to meet any requirement.*

*Let us quote you prices when you are in the market for tanks, towers or other steel products.*

R.D.COLE MANUFACTURING CO.
NEWNAN EST. 1854 GEORGIA
FABRICATORS OF STEEL AND ALLOY STEEL PLATE

# Advertisers' Index


## A

Abbott Machine Co. ..... 6
Aberfoyle Mfg. Co. .....180
Acme Steel Co. .....123
Aldrich Machine Works ..... 34
Alemite Corp. ..... *
Alexander Brothers, Inc. .... 22
Allis-Chalmers Mfg. Co. 35 and 36
American Bemberg Corp. ..... 56
American Moistening Co. .... 72
American Textile Engineering, Inc. ..... 10
American Obermaier Corp. ... *
Arguto Oilless Bearing Co. ...196
Arkansas Co., Inc. ..... 74
Armour & Co. ..... *
Armstrong Cork Products Co..107
Arnold, Hoffman & Co., Inc.... 62
Atlanta Biltmore Hotel .....200
Atlanta Brush Co. .....196
Atlanta Envelope Co. .....154
Atlanta Harness & Reed Mfg. Co. .....203

## B

Bahan Textile Mchry Co., Inc..121
Barber-Colman Co. .....133
Blackmer Pump Co. ..... 37
Boger & Crawford .....184
Borne Scrymser Co. ..... 59
Bosson & Lane, Inc. .....198
Brinton Co., H. .....193
Bristol Co. ..... *
Brooks Oil Co. ..... 71
Brown Co., David ..... 32
Brugger Winding Co. ..... 69
Buffalo Electro-Chemical Co., Inc. .....198
Buffalo Forge Co. .....148
Butterworth & Sons Co., H. W. ..... 23

## C

Cameron Machine Co. .....198
Campbell & Co., John ..... *
Centrif-Air Machine Co., Inc... *
Champion Fibre Co. ..... *
Ciba Co. ..... *
Clinton Co. .....136
Cocker Machine & Fdry Co.... 45
Cole Mfg. Co., R. D. .....203
Cook-Taylor Co., Inc. .....117
Corn Products Refining Co. .. 4
Crane Company ..... 30
Crompton & Knowles Loom Works ..... *
Curtis & Marble Machine Co... 43
Cyclone Fence Co. .....142
Cotton Textile Institute ..... 41

## D

Dayton Rubber Mfg. Co. ..... *
Detergent Products Corp. ....195
Dixie Mercerizing Co. .....174
Drake Corporation ..... 39
Draper Corporation ..... 1
Dronsfield Bros., Ltd. ..... *
Dupont de Nemours & Co., Inc., E. I., Dyestuffs Division.... 21
Dupont de Nemours & Co., Inc., E. I., Paint and Varnish Division ..... 49
Dupont de Nemours & Co., Inc., R. & H. Chemicals Dept. ...195
Durant Mfg. Co. .....156

## E

Eaton, Paul B. .....202
Eclipse Textile Devices, Inc...140
Emerson Apparatus Co. ..... *
Emmons Loom Harness Co. ... 78

## F

Fafnir Bearing Co. ..... *
Fairbanks, Morse & Co. ..... 51
Finnell System, Inc. .....140
Fletcher, Inc., Wm. L. .....202
Foster Machine Co. ..... 15
Foxboro Co. .....76 and 77
Franklin Process Co. .....
.....Inside Front Cover

## G

Gaston County Dyeing Mch. Co. .....125
Gastonia Brush Co. .....198
Gastonia Textile Sheet Metal Works, Inc. .....154
Gates Rubber Co. ..... 27
General Coal Co. ..... 24
General Dyestuff Corp. ..... 63
General Electric Co. ..... 57
General Electric, Nela Park .. 48
General Electric Vapor Lamp Co. ..... 52
Georgia Power Co. ..... 46
Gerrard Co., Inc. .....201
Goldens Foundry & Mch. Co...148
Goodrich Rubber Co., B. F.... ..... 118 and 119
Goodyear Tire & Rubber Co. ..105
Grasselli Chemical Co., Inc. .. 28
Graton & Knight Co. .....144
Greenville Bonded Warehouse Co., Inc. ..... 12
Gulf Refining Co. ..... 33

## H

H. & B. American Machine Co..111
Harris Mfg. Co. .....196
Hart Products Corp. .....199
Hemphill Co. .....182
Henderson Fdry. & Mach. Works ..... 16
Hermas Machine Co. ..... 78
Hinde & Dauch Paper Co. ...129
Hotel Atlanta Biltmore .....200
Hotel Pennsylvania .....200
Hotel Vanderbilt ..... 60
Hotel William Penn .....203
Hotel Willard ..... *
Houghton & Co., E. F. ..... 61
Howard Bros. Mfg. Co. ..... 11
Hurley-Johnson Corp. .....202
Huyck & Sons, F. C. .....196
Hyatt Roller Bearing Co. .... 31
Hygrolit, Inc. ..... 10

## I

Industrial Dryer Corp. .....168
Industrial Rayon Corp. ..... 82
International Nickel Co., Inc... 50

## J

Jackson Moistening Co., Inc...199
Jacobs Graphic Arts Co. ..... 58
Johnson Bronze Co. .....127
Johnson, Chas. B. ..... *
Johnson Service Co. ..... *

## K

Kali Mfg. Co. .....195
Kaumagraph Co. .....164
Keever Starch Co. .....197
Knitting Arts Exhibition ....192

## L

Langevin, George F. .....202
Laurel Soap Mfg. Co. ..... 64
Lawrence Leather Co., A. C....113
Link Belt Co. ..... 29
Logemann Bros. Co. .....145
Loper Co., Ralph E. .....202

## M

Manhattan Rubber Mfg. Co. Division .....Front Cover
Maple Flooring Mfrs. Asso..... 7
McCord, Inc. .....136
Merrow Machine Co. .....150
Moccasin Bushing Co. .....158
Montgomery Co., Inc., E. W.... 12
Morehead Mfg. Co. .....141

## N

National Oil Products Co. .... 70
National Ring Traveler Co. ...158
Neumann & Co., R. .....193
New Departure Mfg. Co. .... 3
New York & New Jersey Lubricant Co. .....149
Norma-Hoffmann Bearing Corp. 26
North, Inc., Frank G. .....146

## O

Old Dominion Box Co. .....190
Onyx Oil & Chemical Co.....
.....67 and 186

## P

Page Fence Asso. .....146
Permutit Co. ..... 42
Phila. Felt Co. .....158
Phila. Quartz Co. .....195
Power Transmission Council... 75
Powers Regulator Co. ..... *
Precision Gear & Machine Co..139
Proctor & Schwartz, Inc. ....153
Provident Life & Accident Insurance Co. ..... *

## Q

Quissett Mills .....188

## R

R. & H. Chemicals Dept., E. I. Du Pont de Nemours & Co., Inc. .....195
Railway Express Agency, Inc..155
Reeves Pulley Co. ..... 79
Reliance Electric & Eng'g. Co.. *
Republic Rubber Co. ..... 73
Republic Steel Corp. ..... 80
Rhoads & Sons, J. E. ..... 25
Robert & Company ..... *
Rockwood Mfg. Co. ..... 68
Rohm & Haas Co., Inc. .....197
Roy & Son Co., B. S. .....201
Royce Chemical Co....Back Cover
Royersford Needle Works, Inc..178

## S

Saco-Lowell Shops .....109
Safety Belt Lacer Co. .....203
Sargent's Sons Corp., C. G. ... 13
Schieren Co., Chas. A. .....154
Scholler Bros., Inc. .....188
Scott & Williams, Inc. .....161
Seydel-Woolley Co. .....136
Sherwin-Williams Co. ..... *
Showalter Printing Co., A. J...199
Sipp-Eastwood Corp. .....201
S. K. F. Industries, Inc. ....138
Skybryte Co. .....131
Socony-Vacuum Oil Co., Inc... .....17 and 18
Solvay Sales Corp. .....196
Sonoco Products Co. .....134
Southern Textile Exposition...142
Staley Sales Company ..... 47
Standard Brands, Inc. .....196
Standard, Coosa, Thatcher Co..190
Standard Oil Co. of Ky. .... 66
Standard Trump Bros. Mch. Co. .....162
Steel Heddle Mfg. Co. .....144
Stein, Hall & Co., Inc. ..... 65
Stewart Iron Works Co., Inc.. 44
Suter, Alfred .....156

## T

Tagliabue Mfg. Co., C. J.....148
Taylor Instrument Companies, Inc. ..... *
Terrell Machine Co., Inc. .....115
Texas Co. ..... 2
Textile Banking Co. .....159
Textile Machine Works .....176
Three-In-One Oil Co. .....143
Toledo Scale Co. ..... 20
Torrington Co. .....171 and 172

## U

Union Special Machine Co..... 19
Universal Winding Co. ..... 53
U S Bobbin & Shuttle Co. .... *
U. S. Ring Traveler Co. ..... 14
U. S. Rubber Co. ..... 40

## V

Veeder-Root, Inc. .....
.....Inside Back Cover
Viscose Company ..... 54

## W

Wak, Inc. .....150
Wallerstein Co., Inc. ..... 55
Want Ads .....202
Waterman, Currier & Co., Inc..190
Watson-Williams Mfg. Co.....157
West Point Foundry & Mch. Co. .....8 and 9
Whitin Machine Works ..... 5
Whitinsville Spinning Ring Co..147
Wildman Mfg. Co. ...166 and 167
Willcox & Gibbs Sewing Machine Co. ..... *
Wolf & Co., Jacques ..... *

FINISHER PICKERS • CARDS • RIBBONS • COMBERS • SLUBBERS • DRAWING FRAMES • SPINNING FRAMES • INTERMEDIATES • TWISTER
JACK FEEDERS • WARPERS • COTTON SLASHERS • LOOMS • INSPECTION MACHINES • FINE FRAMES
DAY
NIGHT
Veeder-Root

# From CARDS to INSPECTION MACHINES

## Veeder-Root COUNTERS cut costs all through the mill

**Not only on looms—where more than 400,000 Veeder-Root Pick Counters are now installed—but on *virtually all* textile machines, Veeder-Root counters are providing mill managers with the facts they need to cut their costs.**

***To count is to control.*** **In hundreds of mills, Veeder-Root counters are helping management to control production . . . to get definite performance for every payroll dollar . . . to correct the human and mechanical weaknesses that undermine production and profits. One mill, with Veeder-Root Counters on practically every unit from cards to inspection machines, increased production 5% with no increase in overhead costs. In mill after mill, the 5% increase in production is typical.**

**Call our nearest office. The Veeder-Root textile specialist stationed there will be glad to show you actual figures on the savings obtainable through mill-wide production records . . . and to show you the full line of Veeder-Root Textile Counters that provide them.**

# VEEDER-ROOT INC.

HARTFORD, CONN. GREENVILLE, S. C.

BOSTON PHILADELPHIA MONTREAL LONDON

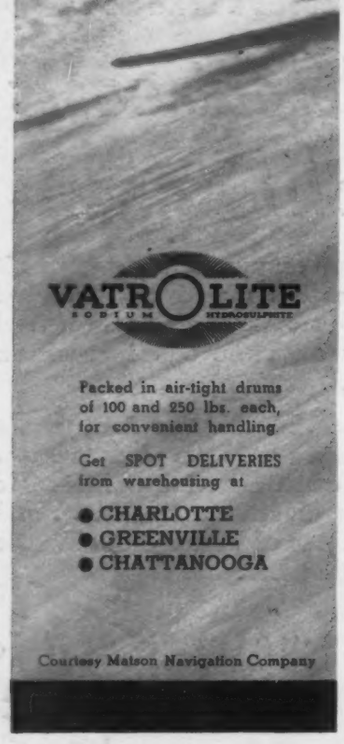
*At the* **SHOW**

Be sure to see the Veeder-Root exhibit at the Greenville Show, Booths No. 107 and 108.

# VATROLITE

*Rides the Crest of Popularity*

**VAT COLOR TREATMENTS**


VATROLITE
SODIUM HYDROSULPHITE
Packed in air-tight drums of 100 and 250 lbs. each, for convenient handling.
Get SPOT DELIVERIES from warehousing at
● CHARLOTTE
● GREENVILLE
● CHATTANOOGA
Courtesy Matson Navigation Company

**TODAY the tide of demand is swinging more and more to Vat Color effects • and with them VATROLITE *of course!***

**VATROLITE is Royce-made Hydrosulphite • in the modern form • a top value for color reduction and stripping at the vat.**

**COMPARE a sample of VATROLITE • and note these superior features •**

- UNIFORMLY GRANULAR • with less dusting
- HIGH STABILITY • Free of black specks
- FULL AND UNIFORM STRENGTH • Staying power

**Specify VATROLITE for Longer • Larger Dyehouse Runs**

**ROYCE CHEMICAL COMPANY**

CHEMICAL MANUFACTURERS

CARLTON HILL • NEW JERSEY

NEW ENGLAND REPRESENTATIVES: RICHARD HAWORTH, 25 FOUNTAIN ST., PROVIDENCE, R. I.